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1973

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Water resources data for the 1972 water year for Iowa consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs. This report contains discharge records for 121 gaging stations; stage and contents for 8 lakes and reservoirs; water quality for 24 gaging stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating local, State, and Federal agencies in Iowa.

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PB 288645

1972

Water Resources Data for Iowa

Water Year 1972

Part 1. Surface Water Records

Part 2. Water Quality Records

MARCH 3, 1849

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UNITED STATES
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY WATER-DATA REPORT IA-72-1

Prepared in cooperation with the Iowa Geological Survey
and with other State and Federal agencies

312

CALENDAR FOR WATER YEAR 1972

OCTOBER 1971

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
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31						

NOVEMBER 1971

S	M	T	W	T	F	S
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DECEMBER 1971

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JANUARY 1972

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30	31					

FEBRUARY 1972

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MARCH 1972

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APRIL 1972

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MAY 1972

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JUNE 1972

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JULY 1972

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23	24	25	26	27	28	29
30	31					

AUGUST 1972

S	M	T	W	T	F	S
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER 1972

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

1972

Water Resources Data for Iowa

Water Year 1972

Part 1. Surface Water Records

Part 2. Water Quality Records

MARCH 3, 1849

UNITED STATES
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY WATER-DATA REPORT IA-72-1

Prepared in cooperation with the Iowa Geological Survey
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Prepared in cooperation with

Iowa Geological Survey
Iowa State Highway Commission
Iowa Natural Resources Council
University of Iowa, Institute of Hydraulic Research
Iowa State University, Agricultural Experiment Station
Iowa State University
Linn County
City of Cedar Rapids
City of Des Moines
City of Fort Dodge
Corps of Engineers, U.S. Army
Environmental Protection Agency

Copies of this report may be obtained from
District Chief, Water Resources Division
U.S. Geological Survey
1041 Arthur Street
Iowa City, Iowa 52240

April 1973

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(Letters after station name designate type of data:
c, chemical; t, water temperature; s, sediment)

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WATER RESOURCES DATA FOR IOWA, 1972

Part 1. Surface-Water Records
Part 2. Water-Quality Records

INTRODUCTION

Water resources data for the 1972 water year for Iowa including records of streamflow or reservoir storage at gaging stations, partial-record stations, and miscellaneous sites, and records of water-quality data on the chemical and physical characteristics of surface and ground water, are given in this report. In Part 1, records are included for 129 gaging stations of which 121 are streamflow discharge stations, and 8 are reservoir or lake stations; also included are records for 34 low-flow partial-record stations, 126 crest-stage partial-record stations, and 36 miscellaneous sites. Locations of gaging stations are shown in Figure 1. In Part 2, data on the quality of surface water (chemical, temperature, and sediment) were collected from designated sampling sites at predetermined intervals such as once daily, weekly, monthly, or less frequently. Records are given for 141 sampling stations of which 25 are continuous record stations, 85 are partial-record stations, and 31 are miscellaneous sites. Locations of water-quality stations are shown in Figure 2. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey under the direction of S. W. Wiitala, district chief. These data represent that portion of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Iowa.

Beginning with the 1961 water year, streamflow records and related data have been released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records beginning with the 1964 water year have been similarly released either in separate reports or in conjunction with streamflow records. These reports are for limited distribution and are designed primarily for rapid release of data shortly after the end of the water year.

Records of discharge and stage of streams, and contents and stage of lakes and reservoirs are published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and since then are in a 5-year series. Records of chemical quality, water temperatures, and suspended sediment have been published since 1941 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." More information is given under the headings "Publications" on page 17.

COOPERATION

The U.S. Geological Survey and organizations of the State of Iowa have had cooperative agreements for the systematic collection of streamflow records since 1914, and for water-quality records since 1943. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Iowa Geological Survey, Samuel J. Tuthill, director and State Geologist

University of Iowa Institute of Hydraulic Research, Hunter Rouse, dean of College of Engineering through July 31, 1972, and Robert B. Hering, acting dean thereafter, and J. F. Kennedy, director

Iowa State Highway Commission, Joseph Coupal, Jr., director of highways and S. E. Roberts, director of research

Iowa Natural Resources Council, O. R. McMurry, director

Iowa State University, Richard E. Hasbrook, contracts and grants officer, and Agricultural Experiment Station, George T. Browning, associate director

Linn County, W. G. Harrington, county engineer

City of Cedar Rapids, Donald Canney, mayor

City of Des Moines, Leo L. Johnson, director, department of public works

City of Fort Dodge, Vincent B. Gardner, manager, department of municipal utilities

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, in collecting records for 66 gaging stations, and by the Environmental Protection Agency, in collecting records for six water-quality stations published in this report. Assistance was also furnished by the Environmental Science Services Administration of the U. S. Department of Commerce.

The following organizations aided in collecting records:

Union Electric Co.; Des Moines Water Works; Ottumwa Water Works; Waterloo Sewage Treatment Plant; University of Iowa; and cities of Ames, Charles City, Council Bluffs, Iowa City, Marshalltown, Rock Rapids, Sioux City, and Waterloo.

DEFINITION OF TERMS

Terms related to streamflow, water-quality and other hydrologic data, as used in this report, are defined as follows:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons.

Bed material is the shifting portion of fragmented material of which the streambed is composed.

Biochemical oxygen demand (BOD) is the amount of oxygen required by bacteria while stabilizing decomposable organic matter under aerobic conditions.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, or about 646,000 gallons, and represents a runoff of approximately 0.0372 inch from 1 square mile.

Chemical oxygen demand (COD) indicates the quantity of oxidizable compounds in water and varies with water composition(s), temperature, period of contact, and other factors.

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (cfs) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic average of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the tables is "Discharge (cfs)."

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

Hardness of water is a physical-chemical characteristic attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO).

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per liter (ug/l, UG/L) is a unit expressing the concentration of chemical constituents in solution as the weight (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (mg/l, MG/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the weight of solute per unit volume of water. Milligrams or micrograms per liter may be converted to milliequivalents (one thousandth of a gram-equivalent weight of a constituent) per liter by multiplying by the factors in table 1, page 6. Concentration of suspended sediment also is expressed in mg/l, and is based on the weight of sediment per liter of water-sediment mixture. Sediment concentrations may be converted to parts per million by using the factors in table 2, p. 7.

Partial-record station is a particular site where limited streamflow or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling) (Guy, 1969).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.0	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distribution given in this report is not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis (Guy, 1969).

Plankton is the floating (or weakly swimming) animal or plant life in a body of water consisting chiefly of minute plants (as diatoms and blue-green algae) and of minute animals (as protozoan, entomostracans, and various larvae).

Runoff in inches (IN.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Table 1.--Factors for conversion of chemical constituents in milligrams or micrograms per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al)*....	0.11119	Iodide (I)......	0.00788
Ammonia as NH	.05544	Iron (Fe)*......	.05372
Barium (Ba).......	.01456	Lead (Pb)*......	.00965
Bicarbonate (HCO)	.01639	Lithium (Li)*...	.14411
Bromide (Br)......	.01251	Magnesium (Mg)..	.08226
Calcium (Ca)......	.04990	Manganese (Mn)*.	.03640
Carbonate (CO)...	.03333	Nickel (Ni)*....	.03406
Chloride (Cl).....	.02821	Nitrate (NO)...	.01613
Chromium (Cr)*....	.11539	Nitrite (NO)...	.02174
Cobalt (Co)*......	.03394	Phosphate (PO).	.03159
Copper (Cu)*......	.03148	Potassium (K)...	.02557
Cyanide (CN)......	.03844	Sodium (Na).....	.04350
Fluoride (F)......	.05264	Strontium (Sr)*.	.02283
Hydrogen (H)......	.99209	Sulfate (SO)...	.02082
Hydroxide (OH)....	.05880	Zinc (Zn)*......	.03060

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*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

> *Suspended sediment* is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.
>
> *Suspended-sediment discharge* is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time. It is computed by multiplying discharge times mg/l times 0.0027.
>
> *Total sediment discharge* or total sediment load is the sum of the suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry weight or volume, that is discharged during a given time (Colby and Hembree, 1955).

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/l).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Table 2.--Factors for conversion of sediment concentration in milligrams per liter to parts per million* (All values calculated to three significant figures)

Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by	Range of concentration in 1000 mg/l	Divide by
0 - 8	1.00	201-217	1.13	411-424	1.26	619-634	1.39
8.05- 24	1.01	218-232	1.14	427-440	1.27	636-650	1.40
24.2 - 40	1.02	234-248	1.15	443-457	1.28	652-666	1.41
40.5 - 56	1.03	250-264	1.16	460-473	1.29	668-682	1.42
56.5 - 72	1.04	266-280	1.17	476-489	1.30	684-698	1.43
72.5 - 88	1.05	282-297	1.18	492-506	1.31	700-715	1.44
88.5 -104	1.06	299-313	1.19	508-522	1.32	717-730	1.45
105 -120	1.07	315-329	1.20	524-538	1.33	732-747	1.46
121 -136	1.08	331-345	1.21	540-554	1.34	749-762	1.47
137 -152	1.09	347-361	1.22	556-570	1.35	765-780	1.48
153 -169	1.10	363-378	1.23	572-585	1.36	782-796	1.49
170 -185	1.11	380-393	1.24	587-602	1.37	798-810	1.50
186 -200	1.12	395-409	1.25	604-617	1.38		

---

*Based on water density of 1.000 g/ml and a specific gravity of sediment of 2.65.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. This ratio should be known especially for water used for irrigating farmland.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current and is expressed in micromhos per centimeter at 25 C. Because the specific conductance is related to the number and specific chemical types of ions in solution, it can be used for approximating the dissolved-solids content in the water. Commonly, the amount of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well, and it may even vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height and the volume of water per unit of time, flowing in a channel.

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that automatically records water temperatures on paper tape.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the water year.

Tons per acre-foot indicates the dry weight of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour day.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

International Hydrologic Decade (IHD) River Stations provide a general index of runoff and materials in the water balance (discharge of water, and dissolved and transported solids) of the world. In the United States, IHD Stations provide indices of runoff and of the general distribution of water in the principal river basins of the conterminous United States and Alaska.

Irrigation network stations are water-quality stations located at or near certain streamflow gaging stations west of the main stem of the Mississippi River. Data collected at these stations are used to evaluate the chemical quality of surface waters used for irrigation and the changes resulting from the drainage of irrigated lands. Prior to water year 1966, the data for these stations were published in the annual water-supply paper series, "Quality of Surface Water for Irrigation, Western States."

Pesticide program is a network of regularly sampled water-quality stations where additional monthly samples are collected to determine the concentration and distribution of pesticides in streams whose waters are used for irrigation or in streams in areas where potential contamination could result from the application of the commonly used insecticides and herbicides.

Radiochemical program is a network of regularly sampled water quality stations where additional samples are collected twice a year (at high and low flow) to be analyzed for radio-isotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

DOWNSTREAM ORDER AND STATION NUMBER

Stations are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all main-stream stations are listed before the first main-stream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 05387500, which appears just to the left of the station name includes the 2-digit part number "05" plus the 6-digit downstream order number "387500." In this report, the records are listed in downstream order by parts. The part number refers to an area whose boundaries coincide with certain natural drainage lines. Records in this report are in Part 5 (Upper Mississippi River basin) and Part 6 (Missouri River basin). All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

SURFACE WATER RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at 5-, 15-, or 60-minute intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in standard textbooks, in WaterSupply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control attic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated on the basis of operator's log, adjoining good record, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30. A calendar for the current water year is shown on the reverse side of the front cover to facilitate finding the day of the week for any date.

The description of the gaging stations gives the location, drainage area, period of record, type and history of gages, average discharge, extremes of discharge or contents, general remarks, and notations of revisions of previously published records. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD." The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified. The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE;" it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. The maximum discharge (or contents) and the maximum gage height, the minimum daily discharge (or minimum contents) and the minimum gage height if it is significant are given under "EXTREMES." In the first paragraph headed "Current year," the data given are for the complete current water year unless otherwise specified. In the second paragraph under "EXTREMES" headed "Period of record:" the data given are for the period of record given in PERIOD OF RECORD paragraph. Reliable information concerning major floods that occurred outside the period of record is given in the third or last paragraph under "EXTREMES." Unless otherwise qualified, the maximum discharge (or contents) corresponds to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge (or contents), it is given separately. Information pertaining to the accuracy of the discharge records, to conditions that affect the natural flow at the gaging station, and availability of Water Quality records, is given under "REMARKS;" for reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir, is also given under "REMARKS."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISIONS (WATER YEARS)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge were revised, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

Skeleton capacity tables are published for all reservoirs for which records of contents are published on a daily basis.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures following "MAX" are the maximum daily discharges for the calendar and water years; likewise, those following "MIN" are the minimum daily discharges.

Footnotes to the table of daily discharges are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

Peak discharges and their times of occurrence and corresponding gage heights for many stations are listed below the yearly summary. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subjected to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330.

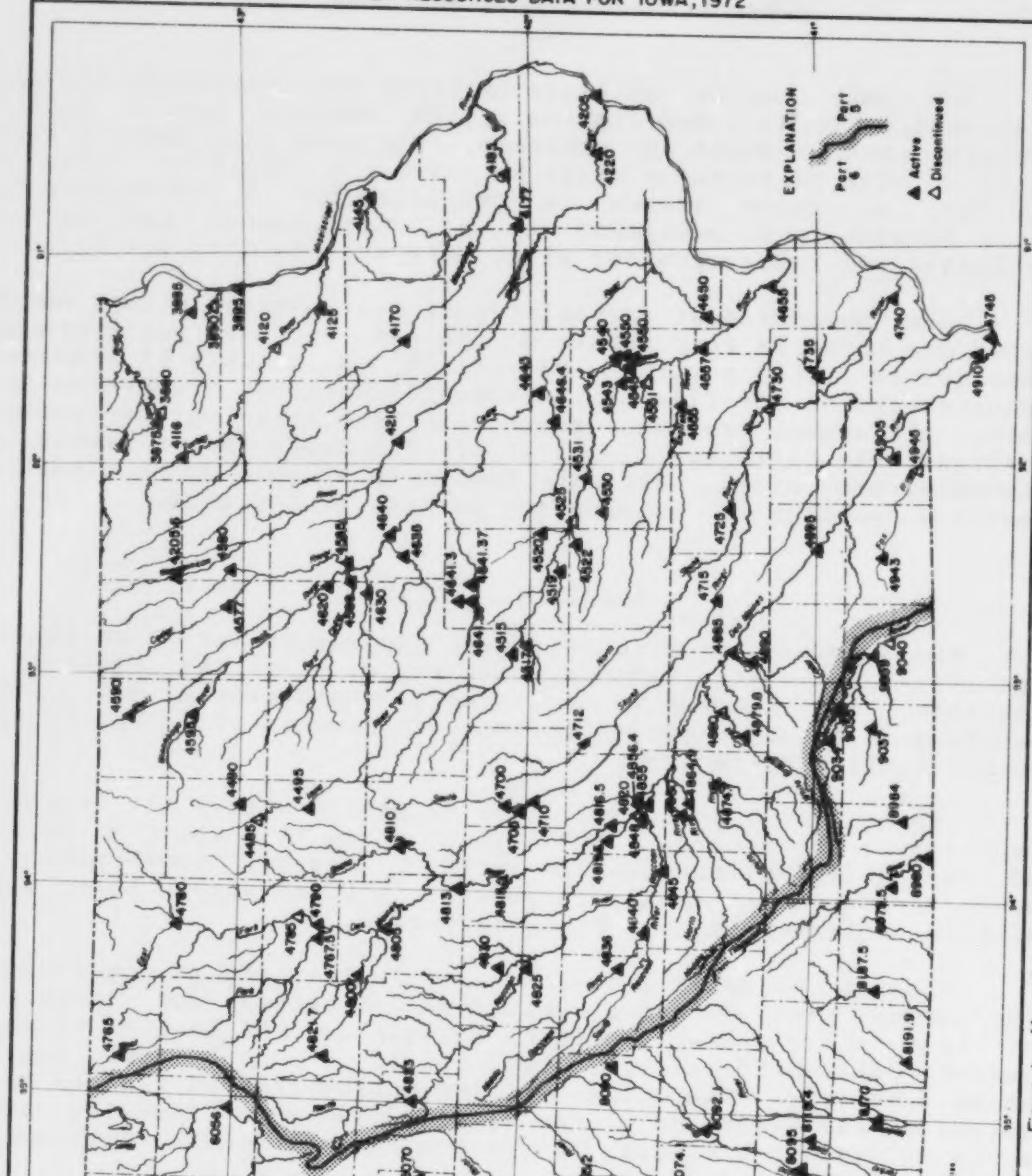
EXPLANATION
Part 6
Part 5
▲ Active
△ Discontinued
50 Miles

Figure 1.--Map of Iowa showing location of continuous-record gaging stations.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Data collected at partial-record stations and miscellaneous sites are given in four tables at the end of the surface-water records in this report. The first is a table of discharge measurements at low-flow partial-record stations, the second is a table of annual maximum stage and discharge at crest-stage stations, the third is a table of discharge measurements at miscellaneous sites, and the fourth is a table of supplemental low-flow measurements made during periods of low flow.

Accuracy of data

The accuracy of discharge data depends primarily on (1) the stability of the stage-discharge relation, or if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good" within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in Iowa for the period October 1960 to September 1965 are in Water-Supply Papers 1914, 1915, 1917, 1918, and 1919.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 and the second series covers the period October 1950 to September 1960. These reports contain summaries of monthly and annual discharge and month-end storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the watersupply papers in which daily records were published for that station. Records for stations in Iowa are compiled in Water-Supply Papers 1308, 1309, and 1310 through September 1950, and in 1728, 1729, and 1730 for October 1950 to September 1960.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

Other data available

Information of a more detailed nature than that published for most of the gaging stations, such as discharge measurements, gage-height records, and rating tables, is on file in the district office. Also, most gaging-station records are available in computer-usable form and many statistical analyses have been made.

WATER QUALITY RECORDS

Collection and examination of data

Water samples for analyses usually are collected at or near gaging stations. The discharge records at these stations are used in conjunction with the computations of the chemical constituents and sediment loads in this report.

Descriptive statements are given for water-quality stations located at or near streamflow stations. Given are location, drainage area, periods of record for the various water-quality data, extremes of pertinent data, and general remarks, in a format similar to that used for streamflow gaging stations.

Water-quality information is presented for chemical quality, biological, microbiological, water temperature, and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics such as hardness, sodium adsorption ratio, specific conductance, and pH. The biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water-temperature data represent once-daily observations except for stations where a continuous temperature recorder furnished information from which daily minimums and maximums are obtained. Fluvial-sediment information is given for suspended-sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

Prior to 1968 water year, data for chemical constituents and concentration of suspended sediment were reported in parts per million (ppm) and water temperatures were reported in degrees Fahrenheit (°F). In October 1967 the U.S. Geological Survey began to use the metric system; data for chemical constituents and concentrations of suspended sediment are now reported in milligrams per liter (mg/l) and water temperatures are given in degrees Celsius (centigrade, °C). In waters with a density of 1.000 g/ml (grams per milliliter), parts per million and milligrams per liter can be considered equal. In waters with a density greater than 1.000 g/ml, values in parts per million should be multiplied by the density to convert to milligrams per liter. To convert temperatures in degrees Celsius to degrees Fahrenheit, see table 3 on the next page.

In October 1968, the Geological Survey began reporting many of the chemical constituents as well as the minor elements in micrograms per liter instead of milligrams per liter. (See "Definition of Terms," p. 4).

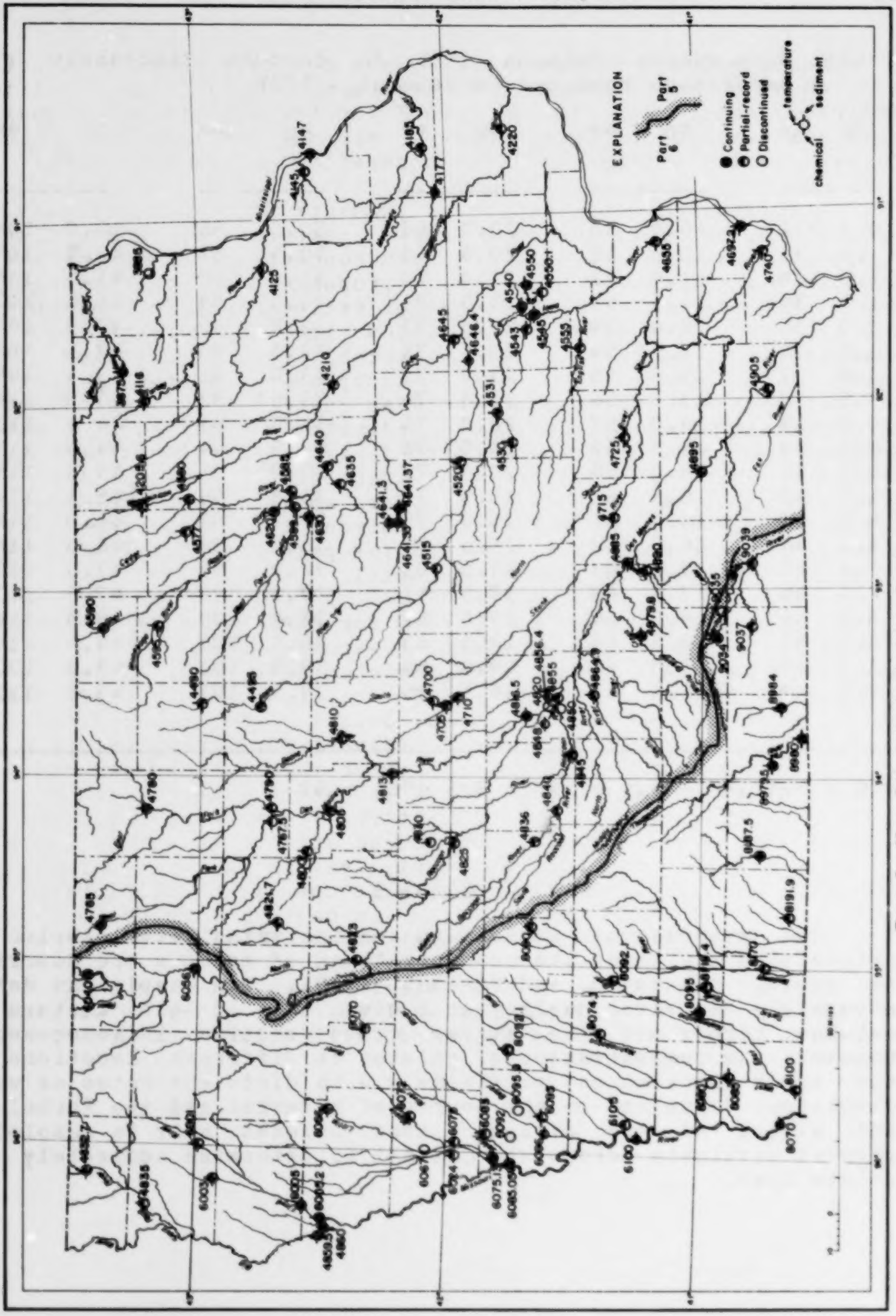
EXPLANATION
Part 6
Part 5
Continuing
Partial-record
Discontinued
chemical
temperature
sediment

Figure 2.--Map of Iowa showing location of water-quality stations.

Table 3.--Degrees Celsius (°C) to degrees Fahrenheit (°F)*
(Temperature reported to nearest 0.5°C)

°C	°F	°C	°F	°C	°F	°C	°F	°C	°F
0.0	32	10.0	50	20.0	68	30.0	86	40.0	104
.5	33	10.5	51	20.5	69	30.5	87	40.5	105
1.0	34	11.0	52	21.0	70	31.0	88	41.0	106
1.5	35	11.5	53	21.5	71	31.5	89	41.5	107
2.0	36	12.0	54	22.0	72	32.0	90	42.0	108
2.5	36	12.5	54	22.5	72	32.5	90	42.5	108
3.0	37	13.0	55	23.0	73	33.0	91	43.0	109
3.5	38	13.5	56	23.5	74	33.5	92	43.5	110
4.0	39	14.0	57	24.0	75	34.0	93	44.0	111
4.5	40	14.5	58	24.5	76	34.5	94	44.5	112
5.0	41	15.0	59	25.0	77	35.0	95	45.0	113
5.5	42	15.5	60	25.5	78	35.5	96	45.5	114
6.0	43	16.0	61	26.0	79	36.0	97	46.0	115
6.5	44	16.5	62	26.5	80	36.5	98	46.5	116
7.0	45	17.0	63	27.0	81	37.0	99	47.0	117
7.5	45	17.5	63	27.5	81	37.5	99	47.5	117
8.0	46	18.0	64	28.0	82	38.0	100	48.0	118
8.5	47	18.5	65	28.5	83	38.5	101	48.5	119
9.0	48	19.0	66	29.0	84	39.0	102	49.0	120
9.5	49	19.5	67	29.5	85	39.5	103	49.5	121

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* C = 5/9 (°F - 32) or °F = 9/5 (°C) + 32

Solutes

The methods of collecting and analyzing water samples for determining the kinds and concentrations of solutes are described by Brown, Skougstad, and Fishman (1970). One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals across the channel to determine accurately the solute load.

Temperature

Water temperatures are measured at most of the water-quality stations. For daily stations, the water temperatures are taken about the same time each day when the sample is collected. Large streams have a small diurnal temperature change while small, shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where continuously recording thermographs are present, the records consist of maximum and minimum temperatures for each day and the monthly averages.

Water temperature is usually measured at gaging stations when the discharge is measured. Although these temperatures are usually measured monthly and on different days of the month, an analysis of these data for each month for a long period of record will indicate significant thermal characteristics of the stream. Data have been analyzed for the period of record for gaging stations with 10 or more years of record. A summary is published in the 1969 report of this series in the table entitled "Extremes and Mean Periodic Water Temperature" for each month.

Sediment

Suspended-sediment concentrations are determined from samples collected using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples are collected, daily loads of suspended sediment are estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Iowa are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1941	942	1948	1132	1955	1401	1962	1943
1942	950	1949	1162	1956	1451	1963	1949
1943	970	1950	1187	1957	1521	1964	1956
1944	1022	1951	1198	1958	1572	1965	1963
1945	1030	1952	1251	1959	1643	1966	1993
1946	1050	1953	1291	1960	1743	1967	2013
1947	1102	1954	1351	1961	1883		

HYDROLOGIC CONDITIONS

Annual runoff during the 1972 water year generally followed the normal runoff distribution of two inches in the northwestern part of the state to eight inches in the eastern part except in three general areas. In Northeast Iowa, the Little Maquoketa and North Fork Maquoketa Rivers experienced record floods in August and September which increased the yearly runoff to eleven inches above normal. Floods in East Central Iowa in July on Rapid and Ralston Creeks also caused yearly runoff totals to exceed the normal by eleven inches. In Southwest Iowa, the Nodaway and Nishnabotna Rivers had record floods in September that increased their yearly runoff totals to two or three inches above normal.

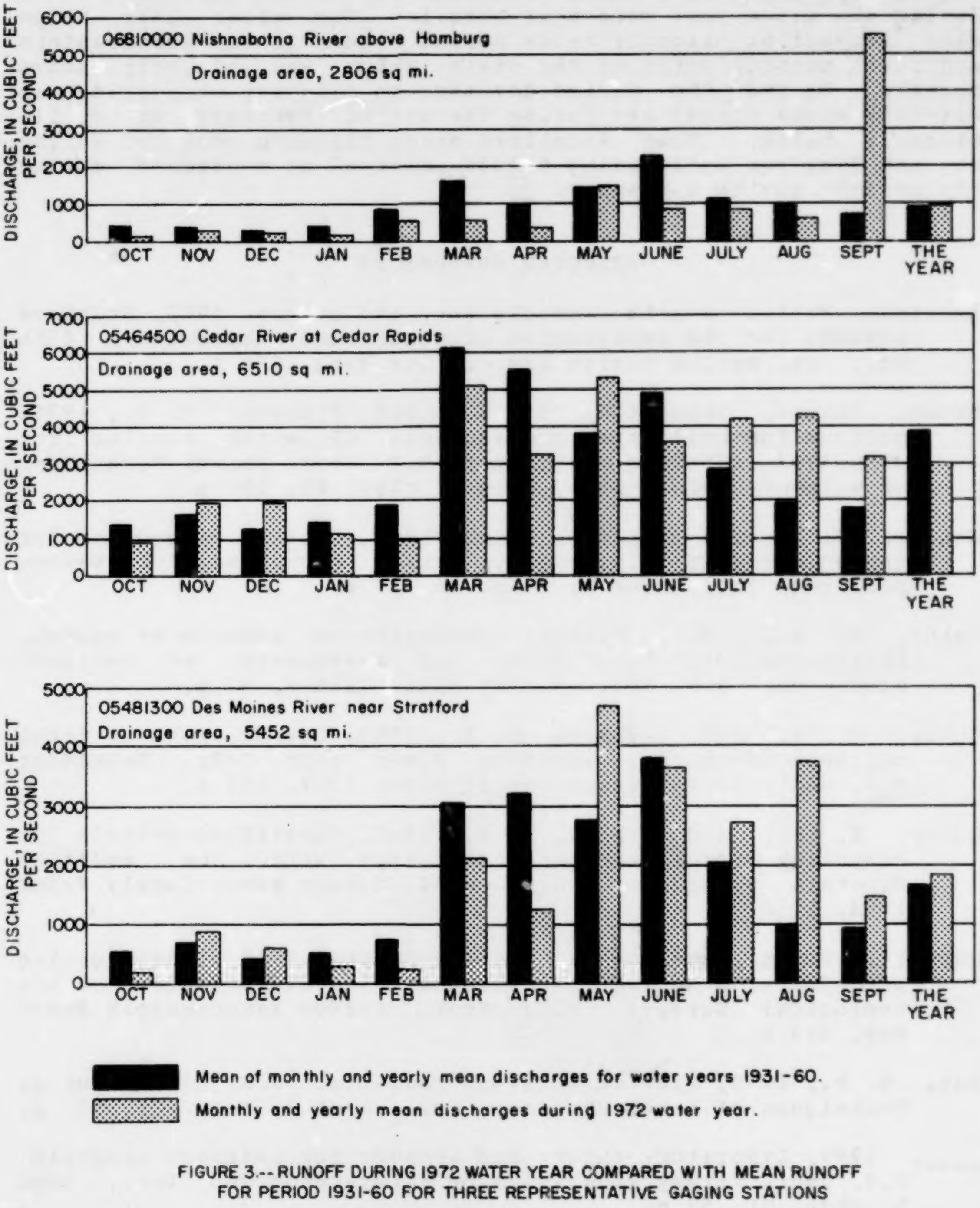

FIGURE 3.--RUNOFF DURING 1972 WATER YEAR COMPARED WITH MEAN RUNOFF FOR PERIOD 1931-60 FOR THREE REPRESENTATIVE GAGING STATIONS

Except for the above events, the streamflow conditions during the water year were near normal. The water year began with streamflow slightly below normal except in the northeastern and north central parts of the state which was slightly above normal. During the period November to January, streamflow was slightly above normal and during the period February to April, slightly below. Some localized minor flooding occurred during May and June but outstanding floods occurred as mentioned during the period July to September.

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PART 1. SURFACE WATER RECORDS

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05387500 UPPER IOWA RIVER AT DECORAH, IOWA

LOCATION.--Lat 43°18'19", long 91°47'48", in NE1/4 SW1/4 sec.16, T.98 N., R.8 W., Winneshiek County, on right bank 1,200 ft upstream from bridge on U.S. Highway 52 (city route) in Decorah, 1,500 ft downstream from Dry Run cutoff, and 3.0 miles upstream from Trout Run.

DRAINAGE AREA.--511 sq mi.

PERIOD OF RECORD.--August 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 850.00 ft above mean sea level.

AVERAGE DISCHARGE.--21 years, 276 cfs (7.33 inches per year, 200,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,340 cfs Sept. 25 (gage height, 10.47 ft); minimum daily, 50 cfs Jan. 15.

Period of record: Maximum discharge, 20,200 cfs Mar. 27, 1961 (gage height, 13.08 ft); minimum daily, 22 cfs Feb. 2-7, 1959.

Maximum flood known, probably since at least 1913, occurred May 29, 1941, at site of former gaging station near Decorah, 4 miles downstream (discharge, 28,500 cfs).

REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 1-3, 17, 18, Dec. 28 to Mar. 13).

Oct. 1 to Mar. 17				Mar. 18 to Sept. 30			
3.7	38	6.0	1,380	3.7	61	6.0	1,470
3.9	77	7.0	2,720	3.9	110	7.0	2,620
4.1	140	8.0	4,580	4.2	210	9.0	5,530
4.5	305	9.0	7,040	4.6	395	10.0	7,400
5.0	570			5.0	625		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	113	85	70	58	53	201	265	186	90	1,650	169
2	96	137	80	80	59	54	194	368	166	87	1,740	163
3	85	130	100	75	58	54	188	575	153	81	908	157
4	83	118	103	70	57	54	181	582	144	78	626	154
5	83	111	101	60	56	55	174	440	139	77	522	152
6	82	102	99	64	57	56	176	376	136	77	474	148
7	80	88	98	68	58	56	177	332	129	84	429	146
8	81	86	97	75	59	57	171	302	126	92	397	144
9	80	93	99	70	60	58	168	279	126	520	361	139
10	80	89	122	65	62	60	171	260	120	860	329	135
11	80	88	117	60	63	160	198	246	115	574	307	243
12	80	87	101	58	64	440	195	236	112	1,660	287	176
13	80	84	85	56	65	1,800	212	236	122	1,210	270	394
14	81	83	103	54	66	4,990	212	241	121	668	252	312
15	80	80	134	50	63	4,890	212	252	115	534	240	315
16	80	124	122	55	60	3,850	216	238	107	492	230	239
17	80	120	110	65	58	2,580	219	226	103	480	221	209
18	79	121	100	90	56	1,700	225	216	100	459	212	193
19	82	126	98	100	55	1,110	219	200	100	549	205	179
20	87	136	97	85	54	870	207	188	101	452	200	192
21	85	135	92	72	53	690	226	178	96	358	194	213
22	85	122	85	65	53	729	263	169	94	302	189	200
23	83	111	86	60	52	490	318	161	89	273	189	234
24	80	108	91	56	52	393	331	159	86	248	191	211
25	80	105	86	54	52	339	280	165	84	227	212	5,780
26	80	108	87	54	52	299	251	167	82	244	340	4,360
27	86	106	72	54	52	272	231	172	81	297	254	2,900
28	88	103	80	54	52	252	222	175	103	285	217	1,870
29	92	106	60	55	52	234	218	208	94	300	198	3,730
30	101	104	70	56	------	218	211	216	90	261	183	3,850
31	105	------	85	57	------	208	------	208	------	336	174	------
TOTAL	2,604	3,224	2,945	2,007	1,658	27,071	6,467	8,036	3,420	12,255	12,201	27,307
MEAN	84.0	107	95.0	64.7	57.2	873	216	259	114	395	394	910
MAX	105	137	134	100	66	4,990	331	582	186	1,660	1,740	5,780
MIN	79	80	60	50	52	53	168	159	81	77	174	135
CFSM	.16	.21	.19	.13	.11	1.71	.42	.51	.22	.77	.77	1.78
IN.	.19	.23	.21	.15	.12	1.97	.47	.59	.25	.89	.89	1.99
AC-FT	5,170	6,390	5,840	3,980	3,290	53,700	12,830	15,940	6,780	24,310	24,200	54,160

CAL YR 1971 TOTAL 125,770 MEAN 345 MAX 7,300 MIN 60 CFSM .68 IN 9.16 AC-FT 249,500
WTR YR 1972 TOTAL 109,195 MEAN 298 MAX 5,780 MIN 50 CFSM .58 IN 7.95 AC-FT 216,600

PEAK DISCHARGE (BASE, 4,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	--	--	* 5,700	9-30	0445	8.90	5,370
9-25	1600	10.47	8,340				

* About

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05388500 PAINT CREEK AT WATERVILLE, IOWA

LOCATION.--Lat 43°12'37", long 91°18'21", in NW1/4 NW1/4 sec.22, T.97 N., R.4 W., Alamakee County, on right bank 100 ft downstream from bridge on county highway X32, 0.5 mile northwest of Waterville and 10 miles upstream from mouth.

DRAINAGE AREA.--42.8 sq mi.

PERIOD OF RECORD.--October 1952 to current year. Monthly discharge only for some periods published in WSP 1728.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--20 years, 14.6 cfs (4.63 inches per year, 10,580 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,320 cfs Mar. 14 (gage height, 7.66 ft); minimum daily, 3.9 cfs July 3-5.

Period of record: Maximum discharge, 5,010 cfs July 29, 1970 (gage height, 10.31 ft); minimum daily, 1.1 cfs for several days in August and September 1958.

Flood in August 1951 reached a stage of 17.35 ft, from information by local resident on floodmarks in vicinity of gage (discharge, 9,100 cfs, computed by unit-runoff studies based on contracted-opening measurement of peak flow at station 05388600). A higher stage may have occurred during the spring of 1949.

REMARKS.--Records good except those for winter period, which are fair.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Sept. 4-10, 15-24).

2.8	3.1	3.8	72
2.9	5.0	4.2	155
3.0	7.5	4.5	250
3.2	15	5.0	500
3.5	35	6.0	1,020

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	12	6.6	7.9	6.3	6.9	8.1	26	6.7	4.6	9.6	7.2
2	9.5	23	6.8	7.5	6.4	6.2	7.7	22	7.0	4.3	12	6.3
3	9.4	11	7.1	6.8	6.3	6.3	7.5	17	6.6	3.9	6.7	5.8
4	9.2	9.2	7.2	6.6	6.2	6.4	7.2	14	6.0	3.9	5.9	5.8
5	8.9	9.0	7.3	6.4	6.3	6.0	8.9	12	5.9	3.9	5.9	5.8
6	9.2	8.2	7.7	6.4	6.3	6.1	11	13	6.2	4.1	9.4	6.1
7	9.1	7.5	7.9	6.2	6.2	6.2	9.0	11	5.8	4.7	7.6	6.3
8	9.5	8.0	7.9	6.3	6.2	5.9	7.2	9.9	5.8	5.3	6.0	6.1
9	9.3	8.3	8.3	7.0	6.2	5.9	8.5	9.4	7.2	9.8	5.6	5.9
10	9.1	8.3	15	7.4	6.1	6.0	9.4	8.8	6.2	4.8	5.6	6.0
11	8.9	8.3	15	7.4	6.1	22	10	8.4	5.5	4.4	5.6	38
12	8.6	8.3	9.6	7.3	6.2	106	8.6	8.1	20	322	5.6	47
13	9.1	8.1	8.4	7.0	6.3	523	8.8	8.8	19	15	5.2	96
14	9.2	8.1	8.6	6.2	6.2	830	8.3	9.6	15	9.8	5.3	11
15	8.9	7.7	25	5.6	6.0	744	8.2	8.3	7.5	11	5.1	9.8
16	8.7	14	15	6.0	6.1	700	8.3	7.7	6.0	7.2	5.1	9.1
17	8.6	11	9.3	6.3	6.5	551	8.5	7.4	5.9	9.6	5.1	8.4
18	8.7	10	9.4	144	6.2	131	7.8	7.1	5.7	9.2	5.3	8.2
19	9.6	9.4	9.5	38	6.4	81	7.5	6.8	5.7	6.7	5.4	7.7
20	9.7	8.9	9.0	8.5	5.9	40	7.1	6.7	8.5	6.3	6.1	8.4
21	9.8	7.9	8.3	9.1	6.0	73	9.2	6.5	5.5	5.8	5.4	12
22	9.1	7.1	8.0	8.6	5.7	25	15	6.3	4.9	5.5	5.5	7.8
23	8.9	7.7	8.6	7.7	6.0	13	10	6.3	4.6	13	5.6	7.7
24	9.0	7.9	8.9	7.0	5.9	11	9.0	6.4	4.5	6.2	6.0	7.7
25	8.9	8.4	8.6	7.1	5.9	9.7	8.2	9.8	4.5	5.4	9.2	100
26	8.9	8.8	8.3	6.6	5.8	9.1	7.5	7.1	4.3	6.0	12	63
27	9.7	8.7	8.1	6.7	6.0	8.8	7.2	6.4	4.3	6.3	6.7	21
28	11	8.1	7.2	6.6	6.4	8.8	7.3	6.2	7.4	5.6	5.9	97
29	9.3	7.8	7.3	6.5	6.4	8.5	7.4	11	6.3	5.3	5.7	35
30	12	8.0	8.0	6.4	------	7.6	7.4	9.5	4.6	5.1	5.6	25
31	12	------	7.6	6.4	------	7.6	------	7.3	------	5.3	5.8	------
TOTAL	291.7	278.7	289.5	383.5	178.5	3,972.0	255.8	304.8	213.1	520.0	201.5	681.1
MEAN	9.41	9.29	9.34	12.4	6.16	128	8.53	9.83	7.10	16.8	6.50	22.7
MAX	12	23	25	144	6.5	830	15	26	20	322	12	100
MIN	8.6	7.1	6.6	5.6	5.7	5.9	7.1	6.2	4.3	3.9	5.1	5.8
CFSM	.22	.22	.22	.29	.14	2.99	.20	.23	.17	.39	.15	.53
IN.	.25	.24	.25	.33	.16	3.45	.22	.26	.19	.45	.18	.59
AC-FT	579	553	574	761	354	7,880	507	605	423	1,030	400	1,350

CAL YR 1971 TOTAL 6,670.8 MEAN 18.3 MAX 328 MIN 4.5 CFSM .43 IN 5.80 AC-FT 13,230
WTR YR 1972 TOTAL 7,570.2 MEAN 20.7 MAX 830 MIN 3.9 CFSM .48 IN 6.58 AC-FT 15,020

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
1-18	1800	5.36	732	7-12	0700	7.50	2,100
3-14	1745	7.66	2,320	9-13	0015	5.49	815
3-17	1600	6.91	1,530				

05389500 MISSISSIPPI RIVER AT MCGREGOR, IOWA

LOCATION.--Lat 43°01'29", long 91°10'21", in SE1/4 SE1/4 sec.22, T.95 N., R.3 W., Clayton County, on right bank in city park at east end of Main Street in McGregor, 2.6 miles upstream from Wisconsin River, 4.3 miles downstream from Yellow River, and at mile 633.4 upstream from Ohio River.
DRAINAGE AREA.--67,500 sq mi, approximately.
PERIOD OF RECORD.--August 1936 to current year.
GAGE.--Water-stage recorder. Datum of gage is 605.30 ft above mean sea level, adjustment of 1912. Prior to June 1, 1937, and since June 2, 1939, auxiliary water-stage recorder; June 1, 1937 to June 1, 1939, auxiliary nonrecording gage 14.1 miles upstream in tailwater of dam 9, at datum 5.30 ft lower.
AVERAGE DISCHARGE.--36 years, 33,090 cfs (6.66 inches per year, 23,970,000 acre-ft per year).
EXTREMES.--Current year: Maximum daily discharge, 116,000 cfs Apr. 29; maximum gage height, 16.32 ft Apr. 27; minimum daily discharge, 17,000 cfs Oct. 15; minimum gage height, 6.48 ft Oct. 14, 15.
Period of record: Maximum daily discharge, 276,000 cfs Apr. 24, 1965; maximum gage height, 25.38 ft Apr. 24, 1965; minimum daily discharge, 6,200 cfs Dec. 9, 1936; minimum gage height, -0.86 ft Aug. 18, 1936.
Maximum stage since at least 1828, that of Apr. 24, 1965.
REMARKS.--Records good except those for winter period, which are fair. Stage-discharge relation affected by backwater from Wisconsin River and Dam 10. Flow regulated by reservoirs and navigation dams.
COOPERATION.--Gage height record at Dam 9 collected in cooperation with Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23,800	38,300	54,800	25,000	20,000	20,000	95,500	111,000	44,600	37,800	81,200	62,100
2	25,100	40,400	52,000	27,000	20,000	20,000	94,800	107,000	44,100	36,900	91,100	60,000
3	26,500	41,600	47,600	27,000	21,000	20,000	93,900	103,000	43,700	35,400	97,900	58,400
4	26,700	42,700	45,700	26,000	21,000	21,000	92,800	98,300	42,500	33,700	101,000	55,200
5	27,700	45,900	44,500	26,000	21,000	21,000	91,300	94,000	42,900	30,600	101,000	50,600
6	28,500	51,400	42,800	23,000	21,000	22,000	88,000	91,700	44,000	28,200	99,700	46,300
7	27,700	55,300	40,200	24,000	21,000	22,000	85,400	89,700	44,900	29,100	96,800	44,800
8	25,200	59,400	38,400	23,000	21,000	22,000	82,700	88,700	45,400	29,000	92,200	42,600
9	23,800	63,100	37,200	23,000	20,000	22,000	79,100	86,600	45,600	28,500	86,000	40,300
10	23,500	63,600	37,500	24,000	20,000	21,000	76,700	84,400	45,300	29,400	79,900	38,100
11	22,700	63,900	38,100	24,000	20,000	21,000	73,500	82,400	45,200	28,500	74,800	37,300
12	19,700	63,900	38,300	25,000	20,000	20,000	70,200	80,400	45,000	28,900	68,600	36,700
13	17,100	62,000	30,600	25,000	20,000	20,000	68,200	78,800	44,600	28,700	62,300	37,200
14	17,500	59,300	23,400	23,000	19,000	27,000	67,200	77,700	44,000	29,200	59,000	39,100
15	17,000	55,800	20,600	23,000	19,000	36,000	68,700	76,700	44,200	29,400	57,400	38,800
16	18,900	54,500	21,500	22,000	20,000	45,000	69,800	75,600	42,900	29,600	55,800	37,700
17	19,300	52,400	26,000	21,000	20,000	50,000	70,600	73,800	41,900	28,200	54,200	36,400
18	19,300	50,800	25,000	21,000	20,000	54,000	73,400	71,500	40,200	27,400	52,600	33,500
19	22,100	48,100	24,900	22,000	20,000	56,000	76,100	67,000	39,000	28,700	52,100	30,700
20	25,300	47,300	25,100	24,000	20,000	60,000	79,300	65,200	39,900	31,600	51,600	28,000
21	28,800	46,400	28,000	23,000	21,000	64,000	84,700	64,200	40,900	33,200	52,800	30,000
22	29,900	44,200	35,000	23,000	21,000	65,500	90,800	61,300	41,300	32,300	54,600	30,500
23	29,200	46,000	36,000	24,000	21,000	66,000	94,500	58,900	41,400	34,400	55,100	30,000
24	27,900	51,000	35,000	24,000	22,000	66,000	98,500	55,600	41,500	38,400	55,100	31,300
25	27,200	53,300	35,000	23,000	22,000	70,200	104,000	51,800	41,400	41,200	55,700	36,700
26	26,700	55,200	35,000	22,000	22,000	77,000	109,000	50,600	40,900	42,400	58,300	48,200
27	28,700	56,200	30,100	20,000	22,000	82,900	112,000	49,900	40,200	45,100	58,800	55,800
28	30,800	56,600	25,000	19,000	22,000	86,000	115,000	49,600	39,800	48,500	59,300	58,600
29	31,600	57,300	27,000	19,000	21,000	89,200	116,000	49,800	39,900	55,200	60,200	60,600
30	33,500	56,300	28,000	19,000	------	92,200	114,000	49,800	38,900	62,700	60,500	66,100
31	36,800	------	25,000	19,000	------	94,100	------	47,300	------	71,400	60,800	------
TOTAL	788,500	1,582.2M	1,053.3M	713,000	598,000	1,453.1M	2,635.7M	2,292.3M	1,276.1M	1,113.6M	2,146.4M	1,301.6M
MEAN	25,440	52,740	33,980	23,000	20,620	46,870	87,860	73,950	42,540	35,920	69,240	43,390
MAX	36,800	63,900	54,800	27,000	22,000	94,100	116,000	111,000	45,600	71,400	101,000	66,100
MIN	17,000	38,300	20,600	19,000	19,000	20,000	67,200	47,300	38,900	27,400	51,600	28,000
CFSM	.38	.78	.50	.34	.31	.69	1.30	1.10	.63	.53	1.03	.64
IN.	.43	.87	.58	.39	.33	.80	1.45	1.26	.70	.61	1.18	.72
AC-FT	1,564M	3,138M	2,089M	1,414M	1,186M	2,882M	5,228M	4,547M	2,531M	2,209M	4,257M	2,582M

CAL YR 1971 TOTAL 14,391,800 MEAN 39,430 MAX 138,000 MIN 10,400 CFSM .58 IN 7.93 AC-FT 28,550,000
WTR YR 1972 TOTAL 16,953,800 MEAN 46,320 MAX 116,000 MIN 17,000. CFSM .69 IN 9.34 AC-FT 33,630,000

M Expressed in thousands.

05411600 TURKEY RIVER AT SPILLVILLE, IOWA

LOCATION.--Lat 43°12'28", long 91°56'56", in SW1/4 NE1/4 sec.19, T.97 N., R.9 W., Winneshiek County, on right bank 60 ft downstream from bridge on county highway W14 at north edge of Spillville, 150 ft downstream from old mill dam, 0.6 mile upstream from Wonder Creek and 98.5 miles above mouth.
DRAINAGE AREA.--177 sq mi.
PERIOD OF RECORD.--June 1956 to current year. Monthly discharge only for some periods, published in WSP 1728.
GAGE.--Water-stage recorder. Datum of gage is 1,034.77 ft above mean sea level.
AVERAGE DISCHARGE.--16 years, 99.2 cfs (7.61 inches per year, 71,870 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 8,600 cfs July 12 (gage height, 16.73 ft); minimum daily, 15 cfs Jan. 28.

Period of record: Maximum discharge, 8,600 cfs July 12, 1972 (gage height, 16.73 ft), minimum daily, 4.4 cfs Feb. 1-3, 1959.

Flood in June 1947 reached a stage of 18.4 ft, from floodmark (discharge, about 10,000 cfs).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	37	39	23	16	27	71	159	71	35	359	71
2	32	40	40	23	16	29	69	305	63	35	733	69
3	31	39	42	23	17	31	69	311	58	34	328	68
4	30	38	43	23	17	33	68	198	54	34	204	67
5	29	35	44	22	17	35	67	144	52	34	167	65
6	29	34	45	23	17	36	71	130	50	35	152	65
7	28	34	43	25	17	37	75	127	49	36	142	64
8	28	35	43	27	18	38	75	114	52	43	134	64
9	27	36	44	28	18	40	75	102	50	408	124	62
10	27	36	51	29	18	45	68	92	48	610	116	62
11	26	35	50	27	19	60	70	83	48	275	110	111
12	26	34	45	25	19	500	78	78	47	3,640	104	97
13	27	33	40	24	19	1,100	89	79	38	2,870	98	171
14	27	32	36	23	19	1,400	91	97	45	390	93	259
15	26	33	32	22	19	1,300	90	104	43	355	89	149
16	26	54	30	21	20	1,000	95	91	42	297	86	123
17	26	56	28	21	20	500	112	80	41	229	82	110
18	26	56	27	24	20	280	110	75	40	327	80	101
19	26	53	26	22	20	210	95	72	41	244	77	96
20	27	48	25	20	20	180	89	66	42	176	75	97
21	27	45	25	19	21	180	99	62	42	156	73	100
22	27	44	25	19	21	248	174	59	39	142	72	95
23	27	44	24	18	21	156	174	57	38	133	73	92
24	28	43	24	18	21	116	131	58	37	123	72	90
25	28	42	24	17	21	98	113	83	37	114	76	4,680
26	27	42	24	17	21	89	101	87	36	118	90	4,070
27	29	42	24	16	21	87	94	97	35	146	100	954
28	31	41	24	15	21	82	92	83	44	140	84	489
29	31	41	23	16	24	78	92	84	38	123	77	1,360
30	32	40	23	16	------	74	89	100	35	112	74	536
31	34	------	23	16	------	72	------	86	------	120	72	------
TOTAL	878	1,222	1,036	662	558	8,161	2,786	3,363	1,355	11,534	4,216	14,437
MEAN	28.3	40.7	33.4	21.4	19.2	263	92.9	108	45.2	372	136	481
MAX	34	56	51	29	24	1,400	174	311	71	3,640	733	4,680
MIN	26	32	23	15	16	27	67	57	35	34	72	62
CFSM	.16	.23	.19	.12	.11	1.49	.52	.61	.26	2.10	.77	2.72
IN.	.18	.26	.22	.14	.12	1.72	.59	.71	.28	2.42	.89	3.03
AC-FT	1,740	2,420	2,050	1,310	1,110	16,190	5,530	6,670	2,690	22,880	8,360	28,640

CAL YR 1971 TOTAL 51,388 MEAN 141 MAX 3,030 MIN 23 CFSM .80 IN 10.80 AC-FT 101,900
WTR YR 1972 TOTAL 50,208 MEAN 137 MAX 4,680 MIN 15 CFSM .77 IN 10.55 AC-FT 99,590

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	--	--	* 1,800	9-25	1915	15.92	7,470
7-12	2300	16.73	8,600	9-29	1815	9.21	1,920

* About

05412500 TURKEY RIVER AT GARBER, IOWA

LOCATION.--Lat 42°44'24", long 91°15'42", in SE1/4 NW1/4 sec.36, T.92 N., R.4 W., Clayton County, on left bank 10 ft downstream from bridge on county highway C43, 800 ft upstream from Wayman Creek, 1,000 ft southeast of Garber, 2,000 ft downstream from Elk Creek, 1 mile downstream from Volga River, and 19.8 miles upstream from mouth.

DRAINAGE AREA.--1,545 sq mi.

PERIOD OF RECORD.--August 1913 to November 1916, May 1919 to September 1927, April 1929 to September 1930, October 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 634.46 ft above mean sea level. Prior to Feb. 7, 1935, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--52 years (1913-16, 1919-27, 1929-30, 1932-72), 876 cfs (7.70 inches per year, 634,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16,300 cfs Sept. 28 (gage height, 21.41 ft); minimum daily, 190 cfs Jan. 28.

Period of record: Maximum discharge, 32,300 cfs Feb. 23, 1922 (gage height, 28.06 ft, from floodmark); minimum daily, 49 cfs Jan. 28, 29, 1940.

Maximum stage since at least 1890, that of Feb. 23, 1922.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Nine discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1308: 1922-25 (M), 1927 (M). WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-31, Nov. 4 to Dec. 2, Feb. 29 to Mar. 11, Mar. 29 to Apr. 8, Apr. 18-23, July 22 to Aug. 1, Sept. 3-10; stage-discharge relation affected by ice Dec. 2-6, Dec. 18 to Mar. 11).

Oct. 1 to Mar. 11		Mar. 12 to Sept. 30	
5.2	238	5.8	360
5.9	442	6.8	710
6.5	682	8.0	1,270
8.0	1,470	10.0	2,460
10.0	2,880	13.0	4,920
		16.0	8,200
		20.0	13,900

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295	434	337	280	210	1,800	615	1,130	872	441	1,570	903
2	284	744	350	280	210	2,200	591	2,100	768	438	6,490	657
3	278	575	370	280	210	2,000	576	2,340	734	433	4,320	580
4	269	482	390	280	210	1,800	555	2,040	684	407	2,800	538
5	266	431	410	280	200	1,700	545	1,650	637	390	2,010	511
6	262	392	420	300	200	1,600	558	2,700	613	374	1,890	488
7	260	352	429	340	200	2,200	575	3,490	589	372	1,760	552
8	264	341	427	360	200	2,700	569	2,420	577	368	1,650	748
9	264	344	434	370	200	2,000	571	1,910	571	593	1,390	570
10	262	351	470	380	200	1,900	606	1,590	553	1,050	1,250	498
11	261	348	586	370	210	2,800	649	1,390	529	995	1,170	3,140
12	260	339	645	350	210	6,200	665	1,250	516	1,590	1,080	1,530
13	261	333	538	320	220	4,310	688	1,170	541	2,960	985	4,190
14	260	327	470	280	220	5,260	703	1,210	577	6,290	911	2,720
15	259	322	1,200	250	230	7,220	719	1,160	573	3,440	844	2,220
16	256	341	970	270	230	7,000	847	1,090	530	2,110	793	1,860
17	254	353	636	290	230	4,340	1,120	1,060	500	2,240	749	1,440
18	253	417	550	330	240	3,220	1,070	965	482	2,140	711	1,260
19	268	459	500	380	240	2,170	1,010	889	475	1,930	773	1,130
20	270	439	470	350	240	1,950	937	841	495	1,760	843	1,030
21	270	416	440	330	240	1,710	919	797	480	1,430	714	1,010
22	266	386	410	310	240	1,720	1,270	754	463	1,260	657	1,030
23	263	371	390	290	240	1,470	1,360	719	443	1,140	630	995
24	261	364	370	270	250	1,290	1,350	702	429	1,140	615	931
25	258	366	350	240	250	1,040	1,180	739	419	1,000	1,090	927
26	257	374	330	220	250	913	1,040	694	412	1,030	1,180	1,780
27	259	382	320	200	270	824	952	700	406	963	805	9,930
28	267	373	310	190	300	764	890	758	426	874	739	13,300
29	273	384	300	200	1,100	723	859	1,060	471	858	722	5,570
30	307	375	290	200	------	673	906	996	463	808	666	5,380
31	360	------	280	200	------	642	------	1,040	------	768	628	------
TOTAL	8,347	11,915	14,392	8,990	7,450	76,139	24,895	41,354	16,228	41,592	42,434	67,418
MEAN	269	397	464	290	257	2,456	830	1,334	541	1,342	1,369	2,247
MAX	360	744	1,200	380	1,100	7,220	1,360	3,490	872	6,290	6,490	13,300
MIN	253	322	280	190	200	642	545	694	406	368	615	488
CFSM	.17	.26	.30	.19	.17	1.59	.54	.86	.35	.87	.89	1.45
IN.	.20	.29	.35	.22	.18	1.83	.60	1.00	.39	1.00	1.02	1.62
AC-FT	16,560	23,630	28,550	17,930	14,780	151,000	49,380	82,030	32,190	82,500	84,170	133,700

CAL YR 1971 TOTAL 476,761 MEAN 1,306 MAX 13,100 MIN 253 CFSM .85 IN 11.48 AC-FT 945,700
WTR YR 1972 TOTAL 361,154 MEAN 987 MAX 13,300 MIN 190 CFSM .64 IN 8.70 AC-FT 716,300

PEAK DISCHARGE (BASE, 8,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-16	0115	16.93	9,340	9-13	0645	17.42	10,000
8-2	0500	17.34	9,920	9-28	1115	21.41	16,300
9-11	0800	17.64	10,300				

05414500 LITTLE MAQUOKETA RIVER NEAR DURANGO, IOWA

LOCATION.--Lat 42°33'18", long 90°44'46", in NW1/4 NE1/4 sec.5, T.89 N., R.2 E., Dubuque County, on left bank 10 ft upstream from bridge on county highway, 300 ft upstream from Clois Branch, 1.7 miles east of Durango, 5.6 miles northwest of court house at Dubuque, and 6.4 miles upstream from mouth.

DRAINAGE AREA.--130 sq mi.

PERIOD OF RECORD.--October 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 612.03 ft above mean sea level. Prior to Jan. 5, 1939, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--38 years, 82.5 cfs (8.62 inches per year, 59,770 acre-ft per year); median of yearly mean discharges, 72 cfs (7.5 inches per year, 52,200 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 40,000 cfs Aug. 2 (gage height, 23.13 ft in gage well, 23.8 ft, from floodmarks); minimum daily, 22 cfs Oct. 7, 12, 15-18, Feb. 19, 20, 23-27.

Period of record: Maximum discharge, 40,000 cfs Aug. 2, 1972 (gage height, 23.13 ft in gage well, 23.8 ft, from floodmarks), from rating curve extended above 6,300 cfs on basis of slope-area measurement of peak flow; minimum daily, 5 cfs July 12, 13, 1936.

Flood of June 15, 1925, reached a stage of about 22.1 ft (discharge, about 29,000 cfs), computed by Corps of Engineers.

REMARKS.--Records excellent except those for winter period, which are good. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Seven discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1508: 1935-38, 1939 (M), 1940, 1943 (M), 1946, 1948.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Nov. 7 to Dec. 14, Dec. 18 to Jan. 8, June 23 to July 16, July 18-31, Aug. 2-25; stage-discharge relation affected by ice Nov. 30 to Dec. 2, Dec. 18-21, Dec. 26 to Jan. 18, Feb. 28 to Mar. 1).

Oct. 1 to Aug. 1				Aug. 2 to Sept. 30			
2.9	18	4.5	250	3.5	77	9.0	1,950
3.1	32	5.5	510	4.0	153	12.0	3,900
3.5	77	7.0	1,020	4.5	250	15.0	6,920
4.0	153	9.0	1,950	5.5	510	18.0	11,600
				7.0	1,020		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	278	35	55	29	200	56	223	63	38	808	669
2	23	594	40	50	30	52	56	204	59	41	11,500	163
3	33	119	44	45	30	51	57	170	57	38	633	133
4	30	86	46	41	28	37	51	141	51	36	400	116
5	24	73	48	40	28	30	51	124	56	36	312	108
6	23	63	55	45	28	33	72	386	56	36	538	99
7	22	55	71	48	27	648	71	565	48	39	449	96
8	24	55	77	54	28	169	54	438	48	37	771	114
9	25	57	106	58	28	74	67	303	48	93	295	87
10	23	55	135	60	29	102	91	228	49	49	225	83
11	23	52	136	56	30	700	92	188	43	56	501	2,060
12	22	50	105	45	30	400	80	163	44	296	263	280
13	23	48	86	35	30	224	83	202	47	126	202	7,650
14	23	46	82	30	29	422	76	236	57	59	171	655
15	22	43	1,570	27	28	1,010	88	203	57	52	150	445
16	22	41	333	25	25	432	796	154	44	44	138	363
17	22	41	188	26	26	268	325	133	43	591	127	309
18	22	53	140	28	26	158	207	118	41	158	115	266
19	36	51	120	31	22	128	163	106	42	90	106	233
20	41	46	110	46	22	131	136	97	52	76	100	217
21	40	41	100	45	23	221	521	90	46	63	95	208
22	34	38	92	43	23	155	508	85	41	55	91	180
23	31	39	93	39	22	80	276	78	39	158	90	173
24	30	41	93	35	22	70	206	77	38	84	87	173
25	31	40	85	30	22	63	167	81	38	63	268	217
26	29	43	80	27	22	58	144	71	38	131	355	325
27	29	49	65	28	22	56	126	76	37	107	155	187
28	30	45	50	29	70	56	124	65	43	76	138	577
29	29	52	60	31	600	60	145	105	47	65	118	422
30	37	45	70	31	------	54	175	102	39	59	106	241
31	41	------	60	30	------	57	------	70	------	54	106	------
TOTAL	867	2,339	4,375	1,213	1,379	6,199	5,064	5,282	1,411	2,906	19,413	16,849
MEAN	28.0	78.0	141	39.1	47.6	200	169	170	47.0	93.7	626	562
MAX	41	594	1,570	60	600	1,010	796	565	63	591	11,500	7,650
MIN	22	38	35	25	22	30	51	65	37	36	87	83
CFSM	.22	.60	1.08	.30	.37	1.54	1.30	1.31	.36	.72	4.82	4.32
IN.	.25	.67	1.25	.35	.39	1.77	1.45	1.51	.40	.83	5.56	4.82
AC-FT	1,720	4,640	8,680	2,410	2,740	12,300	10,040	10,480	2,800	5,760	38,510	33,420

CAL YR 1971 TOTAL 43,974 MEAN 120 MAX 3,000 MIN 18 CFSM .92 IN 12.58 AC-FT 87,220
WTR YR 1972 TOTAL 67,297 MEAN 184 MAX 11,500 MIN 22 CFSM 1.42 IN 19.26 AC-FT 133,500

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	1215	11.97	3,880	8-2	0600	23.13[a]	40,000
3-15	1900	11.71	3,670	9-13	0415	21.71[b]	23,900

[a] From gage well. Gage height from floodmarks (23.8 ft).
[b] From gage well. Gage height from floodmarks (22.3 ft).

05417000 MAQUOKETA RIVER NEAR MANCHESTER, IOWA

LOCATION.--Lat 42°27'22", long 91°25'56", in NW1/4 NE1/4 sec.9, T.88 N., R.5 W., Delaware County, on left bank 0.6 mile downstream from Sand Creek, 1.5 miles upstream from Spring Branch, 2.1 miles southeast from dam on Maquoketa River in Manchester, and at mile 100.5.

DRAINAGE AREA.--305 sq mi.

PERIOD OF RECORD.--April 1933 to current year.

GAGE.--Water-stage recorder. Concrete control since June 1, 1935. Datum of gage is 895.06 ft above mean sea level, adjustment of 1912.

AVERAGE DISCHARGE.--39 years, 202 cfs (8.99 inches per year, 146,300 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,900 cfs Aug. 2 (gage height, 13.92 ft); minimum daily, 44 cfs Oct. 1.

Period of record: Maximum discharge, 20,000 cfs June 11, 1947 (gage height, 21.36 ft from floodmarks), from rating curve extended above 10,000 cfs by velocity-area studies; minimum daily, 6 cfs June 8, 29, 1934.

A flood at Manchester on June 15, 1925, stage unknown, exceeded all other known floods (discharge 25,400 cfs, from determination of peak flow by Prof. F. A. Nagler, University of Iowa).

REMARKS.--Records excellent except those for winter period, which are good.

REVISIONS (WATER YEARS).--WSP 1308: 1948. WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-28; stage-discharge relation affected by ice Dec. 17, 18, Jan. 3-7, Jan. 13 to Mar. 6).

4.6	41	7.0	1,060
4.9	63	9.0	2,610
5.2	110	10.5	3,950
5.6	235	12.0	5,550
6.2	540		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	94	76	135	60	1,200	135	753	245	138	331	195
2	51	228	81	120	58	300	133	847	221	155	5,260	197
3	56	180	86	120	56	200	134	702	203	155	4,220	188
4	54	127	85	110	54	150	128	521	181	146	1,180	168
5	54	106	87	100	52	110	129	469	181	130	727	159
6	54	92	89	105	50	220	134	1,910	186	122	1,010	152
7	53	80	100	110	48	612	144	2,930	172	121	996	152
8	56	81	116	112	50	486	136	1,460	176	113	777	150
9	55	84	149	120	52	302	141	834	174	132	764	142
10	54	83	203	128	54	235	155	616	161	208	569	142
11	55	81	314	120	56	293	173	494	150	179	622	739
12	53	80	278	115	58	552	200	417	146	246	504	669
13	54	78	214	100	62	360	213	405	146	263	406	3,920
14	54	77	199	65	66	426	215	529	167	236	346	2,640
15	54	76	483	60	66	480	222	575	170	192	303	976
16	53	79	616	62	64	660	596	423	164	166	276	634
17	53	87	370	70	62	330	898	359	153	202	249	499
18	54	94	310	110	60	243	575	314	144	490	223	416
19	65	92	282	180	60	207	428	284	141	431	209	360
20	65	92	239	140	60	193	363	262	153	305	198	329
21	61	84	204	120	60	200	435	245	149	245	192	310
22	64	76	175	110	62	301	875	231	141	205	187	300
23	58	79	176	90	68	231	702	218	132	188	180	286
24	59	81	168	70	64	178	488	264	125	174	177	276
25	59	79	159	60	62	158	391	218	128	197	235	291
26	60	82	159	56	60	145	333	129	124	234	271	517
27	64	87	150	54	66	142	292	212	115	304	227	736
28	66	88	118	52	220	142	270	255	139	299	199	672
29	64	93	141	54	1,100	144	282	407	145	237	178	787
30	75	88	147	56	------	134	505	329	140	201	165	570
31	79	------	128	58	------	136	------	288	------	181	161	------
TOTAL	1,800	2,828	6,101	2,962	2,910	9,470	9,825	17,900	4,772	6,595	21,342	17,572
MEAN	58.1	94.3	197	95.5	100	305	328	577	159	213	688	586
MAX	79	228	616	180	1,100	1,200	898	2,930	245	490	5,260	3,920
MIN	44	76	76	52	48	110	128	129	115	113	161	142
CFSM	.19	.31	.65	.31	.33	1.00	1.08	1.89	.52	.70	2.26	1.92
IN.	.22	.34	.74	.36	.35	1.16	1.20	2.18	.58	.80	2.60	2.14
AC-FT	3,570	5,610	12,100	5,880	5,770	18,780	19,490	35,500	9,470	13,080	42,330	34,850

CAL YR 1971	TOTAL 97,681	MEAN 268	MAX 5,400	MIN 43	CFSM .88	IN 11.91	AC-FT 193,800
WTR YR 1972	TOTAL 104,077	MEAN 284	MAX 5,260	MIN 44	CFSM .93	IN 12.69	AC-FT 206,400

PEAK DISCHARGE (BASE, 2,600 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	1000	9.82	3,320	9-13	1400	12.09	5,650
8-2	1615	13.92	7,900				

05417700 BEAR CREEK NEAR MONMOUTH, IOWA

LOCATION.--Lat 42°02'18", long 90°52'59", in NE1/4 SE1/4 sec.31, T.84 N., R.1 E., Jackson County, on right bank 15 ft downstream from bridge on county highway, 1.6 miles upstream from Rat Run, 2.8 miles south of Monmouth, and 8.2 miles upstream from mouth.

DRAINAGE AREA.--61.3 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 728.80 ft above mean sea level.

AVERAGE DISCHARGE.--15 years, 41.9 cfs (9.28 inches per year, 30,360 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,790 cfs Aug. 26 (gage height, 9.81 ft); minimum daily, 6.0 cfs Jan. 28.

Period of record: Maximum discharge, 7,340 cfs Sept. 21, 1965 (gage height, 13.76 ft); minimum daily, 1.8 cfs Dec. 8-12, 1958.

Flood in June 1944 reached a stage of about 21.5 ft, from floodmark, from information by local residents (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor.

REVISIONS (WATER YEARS).--WSP 1708: 1959.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Apr. 22 to May 7; stage-discharge relation affected by ice Dec. 18, Dec. 26 to Mar. 9).

5.0	5.5	5.7	70
5.1	7.9	6.1	176
5.2	11	7.0	500
5.3	16	8.2	980
5.4	25		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	42	12	43	7.0	300	27	152	35	19	105	52
2	6.6	354	19	35	6.6	25	27	158	34	33	947	56
3	8.8	74	18	20	6.4	20	27	126	31	20	217	46
4	10	48	20	12	6.2	16	31	95	29	17	135	41
5	7.5	39	20	18	6.2	13	29	77	31	17	99	38
6	6.9	32	21	30	6.2	25	30	126	34	17	160	36
7	6.5	26	30	28	6.2	200	31	348	29	17	220	37
8	6.7	25	34	30	7.0	40	31	520	28	16	126	70
9	6.8	24	37	70	9.0	24	30	264	33	16	95	40
10	6.7	23	45	40	11	22	30	198	27	17	77	35
11	6.8	22	54	25	13	27	31	152	25	16	127	38
12	6.5	21	46	18	15	110	30	202	26	18	145	36
13	7.1	20	39	14	16	271	31	312	30	20	169	61
14	6.6	19	37	11	17	195	34	170	28	24	92	45
15	6.6	18	755	10	17	420	61	121	40	44	71	36
16	6.6	17	304	11	15	303	240	92	31	22	62	33
17	6.5	17	152	12	14	90	401	74	27	114	55	30
18	6.6	19	100	13	13	46	319	79	24	228	49	28
19	17	19	80	12	12	35	198	76	25	77	48	26
20	20	17	73	11	11	32	234	67	29	62	65	25
21	15	16	57	11	11	31	432	61	26	47	41	26
22	12	14	49	11	10	32	424	55	23	39	38	25
23	11	16	48	10	9.8	26	257	52	22	34	35	25
24	11	16	47	10	9.6	24	182	48	21	290	33	24
25	10	16	44	8.5	9.3	23	140	44	20	123	145	24
26	9.7	17	40	7.5	9.0	25	115	41	20	94	825	24
27	9.6	21	30	6.8	14	25	100	38	19	164	152	23
28	8.7	20	20	6.0	150	24	91	37	22	81	98	39
29	8.2	21	35	6.4	550	24	88	46	22	60	73	65
30	19	20	120	6.6	------	26	100	45	20	49	59	41
31	21	------	50	6.8	------	26	------	38	------	42	52	------
TOTAL	298.8	1,053	2,436	553.6	987.5	2,500	3,801	3,914	811	1,837	4,615	1,125
MEAN	9.64	35.1	78.6	17.9	34.1	80.6	127	126	27.0	59.3	149	37.5
MAX	21	354	755	70	550	420	432	520	40	290	947	70
MIN	6.5	14	12	6.0	6.2	13	27	37	19	16	33	23
CFSM	.16	.57	1.28	.29	.56	1.31	2.07	2.06	.44	.97	2.43	.61
IN.	.18	.64	1.48	.34	.60	1.52	2.31	2.38	.49	1.11	2.80	.68
AC-FT	593	2,090	4,830	1,100	1,960	4,960	7,540	7,760	1,610	3,640	9,150	2,230

CAL YR 1971 TOTAL 16,009.4 MEAN 43.9 MAX 1,900 MIN 4.2 CFSM .72 IN 9.72 AC-FT 31,750
WTR YR 1972 TOTAL 23,931.9 MEAN 65.4 MAX 947 MIN 6.0 CFSM 1.07 IN 14.52 AC-FT 47,470

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	1315	8.84	1,270	8-2	0900	9.56	1,640
2-29	--	--	* 1,050	8-26	0600	9.81	1,790

* About

05418500 MAQUOKETA RIVER NEAR MAQUOKETA, IOWA

LOCATION.--Lat 42°05'05", long 90°38'04", in SW1/4 NE1/4 sec.17, T.84 N., R.3 E., Jackson County, on right bank 500 ft usptream from bridge on State Highway 62, 1,200 ft upstream from Prairie Creek, 2.0 miles northeast of Maquoketa, 2.2 miles downstream from North Fork, and 26.7 miles upstream from mouth.

DRAINAGE AREA.--1,553 sq mi.

PERIOD OF RECORD.--September 1913 to current year. Prior to October 1939, published as "below North Fork near Maquoketa". Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 636.52 ft above mean sea level, adjustment of 1912. Prior to July 14, 1924, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--59 years, 982 cfs (8.59 inches per year, 711,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 15,100 cfs Apr. 16 (gage height, 15.61 ft); minimum daily, 200 cfs Oct. 15.

Period of record: Maximum discharge, 48,000 cfs June 27, 1944 (gage height, 24.70 ft); minimum daily, 105 cfs Feb. 11-20, 1936.

A flood, probably in 1903, reached a stage of 23.5 ft (discharge, 43,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. Diurnal fluctuation caused by powerplant 4 miles above station. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Five discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 405: 1914. WSP 1438: Drainage area. WSP 1508: 1914-17, 1919-25, 1926 (M), 1929, 1933-34 (M), 1943.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Apr. 5, 8-15, May 1-6, Aug. 28-31, Sept. 13-27; stage-discharge relation affected by ice Dec. 2, 3, Dec. 27 to Mar. 6).

-0.1	190	5.0	2,750
+ .4	384	9.0	6,050
1.8	908	13.0	10,600

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	540	540	900	560	6,400	732	2,320	1,320	694	1,390	1,420
2	561	3,500	380	930	560	3,700	696	2,650	1,250	712	6,430	1,700
3	564	1,830	420	800	540	1,800	715	2,640	1,190	723	9,720	1,500
4	560	1,290	485	700	520	1,200	642	2,320	1,150	726	8,530	1,370
5	555	1,070	549	600	500	900	664	2,050	1,060	694	4,770	1,310
6	563	807	562	650	500	800	750	2,500	1,050	663	3,710	1,230
7	542	688	553	700	500	2,740	1,620	4,960	1,070	660	4,100	1,210
8	553	749	563	800	500	3,470	831	8,680	999	643	3,920	1,300
9	549	703	607	1,000	520	1,980	753	6,030	984	685	3,250	1,370
10	549	602	730	1,200	550	1,560	798	4,020	938	808	2,780	1,230
11	555	535	872	1,100	580	1,530	727	3,180	928	847	2,920	1,200
12	559	551	925	1,000	600	2,790	811	2,740	951	711	4,940	2,410
13	667	556	946	900	620	3,660	810	2,660	931	1,120	3,150	4,300
14	399	555	835	800	640	2,450	858	3,020	958	1,300	2,380	9,980
15	200	539	6,490	700	650	4,420	1,030	2,670	992	1,700	2,050	7,660
16	361	508	4,260	800	600	5,810	7,650	2,600	944	926	1,870	3,940
17	384	485	2,900	950	560	3,460	8,080	2,230	825	1,240	1,710	2,850
18	370	544	1,920	1,000	550	1,850	3,710	2,030	842	2,190	1,560	2,440
19	386	545	1,670	800	540	1,340	2,820	1,830	841	2,010	1,430	2,110
20	496	541	1,670	700	540	1,210	2,320	1,690	848	1,590	1,700	1,890
21	515	522	1,480	680	550	1,120	2,550	1,590	919	1,360	1,440	1,800
22	475	519	1,260	660	560	1,190	4,330	1,510	836	1,220	1,330	1,590
23	460	463	1,150	640	570	1,190	3,550	1,440	770	1,060	1,240	1,520
24	462	496	1,130	620	580	1,030	2,920	1,370	685	1,360	1,120	1,470
25	439	489	1,060	600	580	982	2,430	1,350	744	1,490	1,190	1,450
26	418	495	1,020	560	590	887	1,850	1,330	689	1,220	4,710	1,510
27	401	501	900	520	600	800	1,760	1,300	695	1,380	3,520	1,560
28	418	509	700	480	1,500	701	1,670	1,160	720	1,390	2,180	2,220
29	412	553	600	490	4,500	809	1,660	1,160	794	1,240	1,730	6,010
30	448	535	1,300	500	------	767	1,750	1,360	720	1,170	1,530	3,690
31	515	------	1,100	530	------	749	------	1,480	------	1,110	1,390	------
TOTAL	14,902	22,220	39,577	23,310	21,160	63,295	61,487	77,870	27,643	34,642	93,690	75,240
MEAN	481	741	1,277	752	730	2,042	2,050	2,512	921	1,117	3,022	2,508
MAX	667	3,500	6,490	1,200	4,500	6,400	8,080	8,680	1,320	2,190	9,720	9,980
MIN	200	463	380	480	500	701	642	1,160	685	643	1,120	1,200
CFSM	.31	.48	.82	.48	.47	1.31	1.32	1.62	.59	.72	1.95	1.61
IN.	.36	.53	.95	.56	.51	1.52	1.47	1.87	.66	.83	2.24	1.80
AC-FT	29,560	44,070	78,500	46,240	41,970	125,500	122,000	154,500	54,830	68,710	185,800	149,200

CAL YR 1971 TOTAL 496,952 MEAN 1,362 MAX 30,200 MIN 200 CFSM .88 IN 11.90 AC-FT 985,700
WTR YR 1972 TOTAL 555,036 MEAN 1,516 MAX 9,980 MIN 200 CFSM .98 IN 13.30 AC-FT 1,101,000

PEAK DISCHARGE (BASE, 7,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	1145	12.09	9,420	5-8	1000	12.48	9,920
3-16	0130	10.49	7,540	8-3	1500	13.15	10,800
4-16	2215	15.61	15,100	9-14	2030	13.70	12,000

05420500 MISSISSIPPI RIVER AT CLINTON, IOWA

LOCATION.--Lat 41°46'53", long 90°15'04", in NW1/4 sec.34, T.81 N., R.6 E., Clinton County, on right bank at foot of Seventh Avenue in Camanche, 5.0 miles upstream from Wapsipinicon River, 6.4 miles downstream from Clinton, 10.6 miles downstream from dam 13, and at mile 511.8 upstream from Ohio River. Prior to June 6, 1969, at site 400 ft downstream.

DRAINAGE AREA.--85,600 sq mi, approximately, at Fulton-Lyons Bridge where discharge measurements are made.

PERIOD OF RECORD.--June to August 1873 (fragmentary), October 1873 to current year (October 1932 to September 1939, published as "at Le Claire").

GAGE.--Water-stage recorder. Datum of gage is 562.68 ft above mean sea level. Oct. 1, 1955, to June 5, 1969, water-stage recorder at site 400 ft downstream at same datum. Auxiliary water-stage recorder at dam 13 since Oct. 1, 1958. See WSP 1728 for history of changes prior to Oct. 1, 1955.

AVERAGE DISCHARGE.--99 years, 47,030 cfs (7.46 inches per year, 34,070,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 153,000 cfs May 2; maximum gage height, 17.20 ft May 2; minimum daily discharge, 22,000 cfs Feb. 2, 3; minimum gage height, 8.50 ft Feb. 3.

Period of record: Maximum daily discharge, 307,000 cfs Apr. 28, 1965; maximum gage height, 24.65 ft Apr. 28, 1965; minimum daily discharge, 6,500 cfs Dec. 25-27, 1933.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by reservoirs and navigation dams. Records of water temperature for the current year are published in Part 2, Water Resources Data for Illinois.

COOPERATION.--Four discharge measurements furnished by Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33,000	45,100	63,800	35,000	23,000	37,000	97,100	152,000	59,000	46,100	68,600	72,600
2	34,500	46,800	63,000	34,000	22,000	40,000	98,600	153,000	57,900	45,300	82,300	75,900
3	34,600	50,600	59,700	32,000	22,000	36,000	102,000	150,000	54,800	44,000	108,000	77,500
4	34,500	54,800	58,000	28,000	23,000	31,000	104,000	145,000	52,400	41,400	112,000	78,300
5	37,100	55,400	56,000	24,000	24,000	28,000	102,000	139,000	49,900	39,400	106,000	72,900
6	41,500	56,000	52,000	28,000	24,000	26,000	103,000	133,000	50,300	36,200	107,000	65,200
7	42,700	59,200	48,000	31,000	24,000	25,000	102,000	129,000	50,600	33,100	107,000	60,800
8	41,000	58,200	45,000	31,000	24,000	27,000	101,000	128,000	51,800	32,400	108,000	61,500
9	40,000	60,900	42,000	31,000	24,000	30,000	97,600	129,000	53,100	34,000	108,000	57,900
10	40,000	67,100	43,000	31,000	24,000	28,000	93,800	124,000	54,300	35,400	104,000	50,100
11	38,000	68,500	43,000	30,000	24,000	27,000	90,000	114,000	54,500	36,300	98,000	53,800
12	34,000	68,600	44,000	29,000	24,000	30,000	86,700	105,000	53,200	37,500	98,200	60,700
13	30,100	68,600	44,000	29,000	24,000	40,000	84,900	102,000	52,400	40,800	94,200	60,100
14	29,000	68,400	38,000	29,000	23,000	45,000	81,400	99,500	54,000	43,800	83,700	78,800
15	26,800	65,900	41,000	28,500	23,000	52,000	79,500	96,100	57,500	46,500	75,000	72,600
16	25,700	64,100	48,000	28,500	23,000	62,700	81,300	93,900	55,100	45,800	69,000	62,100
17	24,900	63,700	40,000	28,000	23,000	73,500	98,000	91,200	51,100	44,300	67,500	56,900
18	25,200	63,100	26,000	27,000	24,000	71,200	98,600	87,300	49,400	45,600	64,900	51,200
19	26,800	62,600	24,000	26,000	24,000	64,300	94,900	84,400	48,200	44,700	63,800	51,100
20	28,600	62,000	27,000	27,000	24,000	63,000	89,400	83,800	47,200	40,400	62,600	43,300
21	30,800	58,500	31,000	27,000	24,000	68,700	88,100	78,200	49,400	39,000	61,300	41,200
22	34,600	53,500	34,000	27,500	24,000	87,100	95,800	74,100	49,200	39,400	61,500	42,600
23	35,900	53,800	37,000	28,000	24,000	90,100	107,000	71,200	49,000	40,500	62,100	43,200
24	36,300	54,200	42,000	28,000	24,000	89,000	113,000	68,400	48,300	43,600	62,300	43,900
25	36,200	55,000	43,000	27,500	24,000	87,200	121,000	66,700	47,500	46,900	64,100	43,800
26	35,200	56,600	44,000	27,000	24,000	83,800	129,000	65,900	47,100	50,200	70,000	49,100
27	35,000	59,300	45,000	27,000	25,000	83,200	136,000	62,900	46,600	52,500	76,400	54,200
28	36,600	61,900	40,000	26,000	27,000	87,000	141,000	59,600	46,800	54,900	76,800	73,700
29	38,400	63,800	35,000	25,000	32,000	90,400	146,000	58,700	46,900	55,600	73,900	87,000
30	39,600	64,100	36,000	24,000	------	92,200	150,000	58,600	46,900	55,600	71,700	92,000
31	41,500	------	36,000	24,000	------	95,400	------	58,600	------	59,300	71,200	------
TOTAL	1,068.1M	1,790.3M	1,328.5M	878,000	698,000	1,790.8M	3,112.7M	3,062.1M	1,534.4M	1,350.5M	2,539.1M	1,834.0M
MEAN	34,450	59,680	42,850	28,320	24,070	57,770	103,800	98,780	51,150	43,560	81,910	61,130
MAX	42,700	68,600	63,800	35,000	32,000	95,400	150,000	153,000	59,000	59,300	112,000	92,000
MIN	24,900	45,100	24,000	24,000	22,000	25,000	79,500	58,600	46,600	32,400	61,300	41,200
CFSM	.40	.70	.50	.33	.28	.67	1.21	1.15	.60	.51	.96	.71
IN.	.46	.78	.58	.38	.30	.78	1.35	1.33	.67	.59	1.10	.80
AC-FT	2,119M	3,551M	2,635M	1,742M	1,384M	3,552M	6,174M	6,074M	3,043M	2,679M	5,036M	3,638M

CAL YR 1971 TOTAL 18,801,200 MEAN 51,510 MAX 168,000 MIN 18,000 CFSM .60 IN 8.17 AC-FT 37,290,000
WTR YR 1972 TOTAL 20,986,500 MEAN 57,340 MAX 153,000 MIN 22,000 CFSM .67 IN 9.12 AC-FT 41,630,000

M Expressed in thousands.

05420560 WAPSIPINICON RIVER NEAR ELMA, IOWA

LOCATION.--Lat 43°14'34", long 92°31'48", in NW1/4 NW1/4 sec.8, T.97 N., R.14 W., Howard County, on right bank 10 ft downstream from bridge on county highway B17, 0.2 mile downstream from small left-bank tributary, 4.8 miles west of Elma, and at mile 217.9.

DRAINAGE AREA.--95.2 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,130.36 ft above mean sea level.

AVERAGE DISCHARGE.--14 years, 55.0 cfs (7.85 inches per year, 39,850 acre-ft per year).

EXTREMES.--Maximum discharge, 5,420 cfs Sept. 29 (gage height, 14.48 ft); minimum daily, 6.6 cfs Feb. 11.

Period of record: Maximum discharge, about 5,700 cfs Mar. 29, 1962 (gage height, 14.84 ft, backwater from ice); minimum daily, 1.9 cfs Feb. 4-8, 1959.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Mar. 25 to May 15, July 12, Sept. 25-30; stage-discharge relation affected by ice Nov. 7, 8, 16-18, 21-14, Nov. 27 to Dec. 3, Dec. 10 to Mar. 3).

3.81	6.7	9.0	391
3.9	9.1	11.0	740
4.0	12	12.0	1,100
5.0	63	13.0	2,080
7.0	190	14.0	4,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	18	16	12	6.9	134	28	188	33	13	76	12
2	8.6	20	14	11	6.9	132	26	285	29	12	156	11
3	8.7	17	14	10	6.8	128	23	215	26	14	81	10
4	8.6	14	13	9.6	6.8	125	25	126	22	12	48	10
5	9.1	12	13	9.2	6.8	122	24	86	20	10	36	10
6	8.4	11	14	9.0	6.8	121	25	81	21	10	32	10
7	8.0	11	14	9.1	6.7	125	26	74	20	14	29	10
8	8.1	11	14	9.7	6.7	129	24	59	19	18	26	10
9	8.4	11	14	10	6.7	133	26	49	18	74	23	9.9
10	8.5	11	15	11	6.7	147	28	41	17	161	20	9.7
11	8.5	11	23	11	6.6	294	33	37	15	60	19	66
12	8.4	10	27	12	6.7	558	34	34	15	708	18	79
13	8.9	11	26	12	6.8	884	35	33	14	193	16	207
14	8.9	10	19	11	6.9	914	35	35	15	97	15	224
15	8.5	9.8	17	10	7.1	804	34	34	14	119	14	86
16	8.6	14	16	9.3	7.3	514	55	29	13	115	13	51
17	8.4	20	16	8.4	7.7	285	55	26	12	124	13	39
18	8.5	28	16	7.6	7.8	219	43	24	11	227	12	32
19	9.4	29	17	6.8	7.9	154	37	21	11	156	12	28
20	9.8	22	17	6.9	8.0	119	34	20	12	81	11	26
21	11	16	17	7.0	8.2	118	50	18	12	57	11	145
22	10	15	17	7.3	8.6	101	88	17	11	47	11	105
23	9.4	15	17	7.4	9.0	64	79	15	10	36	11	57
24	9.4	14	18	7.5	9.4	54	58	15	9.8	29	12	44
25	9.5	14	18	7.5	9.6	44	47	15	9.8	25	13	844
26	9.5	14	16	7.5	10	38	39	36	9.5	28	34	1,980
27	11	14	16	7.4	10	33	34	156	9.9	61	26	735
28	15	14	15	7.2	11	33	32	238	28	59	17	940
29	14	13	14	7.1	12	29	41	72	26	40	14	3,540
30	17	14	13	7.0	------	29	66	50	16	31	12	927
31	21	------	12	7.0	------	28	------	39	------	28	12	------
TOTAL	309.3	443.8	508	275.5	228.4	6,612	1,184	2,168	499.0	2,659	843	10,257.6
MEAN	9.98	14.8	16.4	8.89	7.88	213	39.5	69.9	16.6	85.8	27.2	342
MAX	21	29	27	12	12	914	88	285	33	708	156	3,540
MIN	8.0	9.8	12	6.8	6.6	28	23	15	9.5	10	11	9.7
CFSM	.10	.16	.17	.09	.08	2.24	.41	.73	.17	.90	.29	3.59
IN.	.12	.17	.20	.11	.09	2.58	.46	.85	.19	1.04	.33	4.01
AC-FT	614	880	1,010	546	453	13,110	2,350	4,300	990	5,270	1,670	20,350

CAL YR 1971 TOTAL 19,627.8 MEAN 53.8 MAX 1,090 MIN 7.7 CFSM .57 IN 7.67 AC-FT 38,930
WTR YR 1972 TOTAL 25,987.6 MEAN 71.0 MAX 3,540 MIN 6.6 CFSM .75 IN 10.15 AC-FT 51,550

PEAK DISCHARGE (BASE, 600 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-13	1900	11.84	1,020	9-26	0300	13.44	2,640
7-12	1000	12.41	1,250	9-29	0145	14.48	5,420

05421000 WAPSIPINICON RIVER AT INDEPENDENCE, IOWA

LOCATION.--Lat 42°27'49", long 91°53'42", in SE1/4 sec.4, T.88 N., R.9 W., Buchanan County, on right bank at Sixth Street in Independence, 1,800 ft downstream from dam at abandoned hydroelectric plant, 4.9 miles downstream from Otter Creek, 9.7 miles upstream from Pine Creek, and at mile 142.5.

DRAINAGE AREA.--1,048 sq mi.

PERIOD OF RECORD.--July 1933 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 882.85 ft above mean sea level. Prior to May 24, 1941, nonrecording gage in tailrace of powerplant 1,800 ft upstream at datum 80.00 ft lower.

AVERAGE DISCHARGE.--39 years, 546 cfs (7.08 inches per year, 395,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,200 cfs Sept. 30 (gage height, 11.50 ft); minimum daily, 46 cfs Oct. 13.

Period of record: Maximum discharge, 26,800 cfs July 18, 1968 (gage height, 21.11 ft); minimum daily, about 7.0 cfs many times in period 1933-34.

Maximum stage since at least 1901, that of July 18, 1968.

REMARKS.--Records excellent. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1938-39, 1940 (M), 1947.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Jan. 3-7, 13-17, Jan. 23 to Feb. 29).

4.5	44	5.0	235	7.0	2,360
4.6	69	5.4	510	9.0	4,900
4.8	138	6.0	1,140	13.0	10,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	134	126	147	58	1,230	388	815	420	317	431	249
2	63	203	124	140	56	793	377	1,340	392	420	1,780	251
3	61	199	128	130	54	435	376	1,490	386	903	2,580	238
4	56	172	143	110	54	398	346	1,470	295	791	2,070	214
5	59	180	163	100	52	291	334	1,460	308	713	2,020	197
6	63	166	182	95	52	301	324	2,660	299	462	2,130	183
7	56	128	189	98	52	592	332	5,030	263	353	1,800	195
8	58	124	192	102	52	794	318	3,910	289	295	1,380	190
9	56	129	192	107	52	728	317	2,750	285	288	1,380	188
10	54	126	237	111	54	620	328	2,080	257	305	1,150	217
11	54	120	313	112	54	702	327	1,590	232	386	968	370
12	50	125	333	115	54	960	347	1,240	222	608	787	434
13	46	112	232	105	56	1,040	375	1,060	219	718	657	1,580
14	49	120	243	90	56	1,090	391	1,020	278	852	554	2,230
15	54	114	371	80	56	1,230	407	997	378	1,030	469	1,500
16	52	125	423	74	54	1,370	570	917	374	1,190	416	1,310
17	48	123	262	70	54	1,290	813	856	319	1,480	372	1,110
18	51	139	199	84	54	1,410	779	789	273	2,060	333	916
19	64	134	233	90	54	2,190	705	695	262	2,280	302	735
20	66	183	233	90	54	2,910	650	611	296	1,840	272	615
21	66	169	239	88	54	2,300	665	551	288	1,290	256	569
22	63	165	218	85	56	1,760	882	496	269	1,070	238	523
23	61	168	216	80	56	1,140	935	442	233	921	223	492
24	64	161	207	75	56	911	920	409	205	797	219	461
25	64	152	199	70	58	827	879	377	188	773	214	469
26	63	154	197	64	58	678	791	356	175	649	266	885
27	68	155	175	58	58	582	679	320	167	609	309	1,460
28	68	158	129	52	70	505	622	307	217	508	301	1,880
29	75	159	150	54	200	466	619	324	248	439	282	5,310
30	96	165	153	56	------	419	624	366	278	388	253	7,730
31	108	------	142	58	------	395	------	379	------	356	237	------
TOTAL	1,920	4,462	6,543	2,790	1,748	30,347	16,420	37,113	8,315	25,091	24,649	32,701
MEAN	61.9	149	211	90.0	60.3	979	547	1,197	277	809	795	1,090
MAX	108	203	423	147	200	2,910	935	5,030	420	2,280	2,580	7,730
MIN	46	112	124	52	52	291	317	307	167	288	214	183
CFSM	.06	.14	.20	.09	.06	.93	.52	1.14	.26	.77	.76	1.04
IN.	.07	.16	.23	.10	.06	1.08	.58	1.32	.30	.89	.87	1.16
AC-FT	3,810	8,850	12,980	5,530	3,470	60,190	32,570	73,610	16,490	49,770	48,890	64,860

CAL YR 1971 TOTAL 253,932 MEAN 696 MAX 6,330 MIN 44 CFSM .66 IN 9.01 AC-FT 503,700
WTR YR 1972 TOTAL 192,099 MEAN 525 MAX 7,730 MIN 46 CFSM .50 IN 6.82 AC-FT 381,000

PEAK DISCHARGE (BASE, 4,000 CFS).--May 7 (0930) 5,280 cfs (9.31 ft); Sept. 30 (0400) 8,200 cfs (11.50 ft).

05422000 WAPSIPINICON RIVER NEAR DE WITT, IOWA

LOCATION.--Lat 41°46'01", long 90°32'05", in SW1/4 NE1/4 sec.6, T.80 N., R.4 E., Clinton County, on left bank 5 ft upstream from bridge on U.S. Highway 61, 0.9 mile downstream from Silver Creek, 4.0 miles south of water tower in De Witt, 6.2 miles upstream from Brophy Creek, and 18.2 miles upstream from mouth.
DRAINAGE AREA.--2,330 sq mi.
PERIOD OF RECORD.--June 1934 to current year.
GAGE.--Water-stage recorder. Datum of gage is 598.81 ft above mean sea level.
AVERAGE DISCHARGE.--38 years, 1,393 cfs (8.12 inches per year, 1,009,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 8,040 cfs May 13 (gage height, 11.06 ft); minimum daily, 207 cfs Oct. 18.

Period of record: Maximum discharge, 26,000 cfs June 27, 1944 (gage height, 12.07 ft); maximum gage height, 12.30 ft July 9, 1969; minimum daily discharge, 70 cfs Jan. 17-24, 1940.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Four discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1308: 1937 (M). WSP 1438: Drainage area. WSP 1708: 1951.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	246	348	480	1,100	320	3,400	1,550	4,660	1,450	757	1,480	973
2	244	458	444	900	310	3,080	1,500	4,280	1,390	759	2,060	950
3	258	1,080	438	750	300	2,950	1,450	3,500	1,340	766	4,340	1,040
4	255	929	434	600	290	2,660	1,400	3,280	1,300	752	4,770	1,010
5	250	759	466	700	290	2,860	1,350	3,220	1,270	760	4,340	950
6	245	687	469	800	290	2,760	1,320	3,250	1,310	856	5,080	905
7	236	620	475	1,000	290	2,300	1,310	3,730	1,260	1,010	5,990	866
8	239	572	510	1,100	290	2,120	1,240	6,060	1,160	1,020	5,480	851
9	237	549	544	1,050	290	2,060	1,220	7,240	1,220	968	5,080	839
10	237	530	598	1,000	290	1,920	1,190	7,510	1,190	873	4,580	824
11	234	507	691	900	290	1,850	1,170	7,550	1,130	799	3,620	811
12	232	484	744	800	300	1,990	1,150	7,750	1,110	752	3,890	798
13	225	469	760	700	300	2,430	1,150	7,930	1,100	776	3,810	818
14	226	456	809	650	310	2,810	1,150	7,270	1,180	826	3,220	998
15	220	442	1,890	600	310	3,810	1,180	5,330	1,400	1,250	2,680	1,510
16	219	429	4,280	640	320	5,650	2,340	4,010	1,320	1,380	2,320	2,520
17	213	420	3,650	680	320	4,310	5,730	3,450	1,150	1,360	2,060	2,880
18	207	432	2,500	700	330	3,090	6,280	3,110	1,120	3,720	1,870	2,560
19	213	424	1,980	640	330	2,750	5,050	2,830	1,120	4,910	1,700	2,160
20	229	423	1,610	560	320	2,550	3,630	2,610	1,170	3,350	1,650	1,940
21	256	425	1,500	520	320	2,470	3,350	2,420	1,110	3,090	1,480	1,760
22	250	417	1,400	470	310	2,660	5,490	2,230	1,030	3,000	1,330	1,570
23	251	417	1,300	430	310	3,040	5,940	2,060	981	2,870	1,240	1,410
24	249	432	1,250	400	310	3,190	4,420	1,930	945	2,530	1,160	1,320
25	246	442	1,200	370	310	2,890	3,610	1,830	910	2,440	1,100	1,260
26	242	454	1,160	340	310	2,350	3,160	1,740	873	2,260	1,300	1,200
27	237	468	1,110	310	350	2,040	2,870	1,630	833	2,040	1,580	1,150
28	236	482	1,010	280	1,100	1,870	2,670	1,550	821	2,210	1,360	1,190
29	236	498	943	290	3,000	1,770	2,590	1,520	819	1,940	1,170	1,840
30	252	496	1,210	310	------	1,650	2,590	1,550	779	1,750	1,090	2,200
31	286	------	1,300	320	------	1,590	------	1,540	------	1,600	1,020	------
TOTAL	7,406	15,549	37,155	19,910	12,410	82,870	79,050	118,570	33,791	53,374	83,850	41,103
MEAN	239	518	1,199	642	428	2,673	2,635	3,825	1,126	1,722	2,705	1,370
MAX	286	1,080	4,280	1,100	3,000	5,650	6,280	7,930	1,450	4,910	5,990	2,880
MIN	207	348	434	280	290	1,590	1,150	1,520	779	752	1,020	798
CFSM	.10	.22	.51	.28	.18	1.15	1.13	1.64	.48	.74	1.16	.59
IN.	.12	.25	.59	.32	.20	1.32	1.26	1.89	.54	.85	1.34	.66
AC-FT	14,690	30,840	73,700	39,490	24,620	164,400	156,800	235,200	67,020	105,900	166,300	81,530

CAL YR 1971 TOTAL 574,574 MEAN 1,574 MAX 7,800 MIN 207 CFSM .68 IN 9.17 AC-FT 1,140,000
WTR YR 1972 TOTAL 585,038 MEAN 1,598 MAX 7,930 MIN 207 CFSM .69 IN 9.34 AC-FT 1,160,000

PEAK DISCHARGE (BASE, 6,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
4-18	0815	10.56	6,350	5-13	0845	11.06	8,040
4-23	0545	10.50	6,200	8-7	1000	10.36	6,070

05449000 EAST BRANCH IOWA RIVER NEAR KLEMME, IOWA

LOCATION.--Lat 43°00'31", long 93°37'42", in NE1/4 NW1/4 sec.36, T.95 N., R.24 W., Hancock County, on left bank 15 ft downstream from bridge on county highway B55, 1.2 miles west of Chicago, Rock Island and Pacific Railroad crossing in Klemme, 1.5 miles upstream from Drainage ditch 9, 18.2 miles upstream from confluence with West Branch Iowa River, and at mile 341.0 (revised).

DRAINAGE AREA.--133 sq mi.

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1958, published as East Fork Iowa River near Klemme.

GAGE.--Water-stage recorder. Datum of gage is 1,179.33 ft above mean sea level. Apr. 1, 1948, to Sept. 30, 1955, nonrecording gage at site 0.6 mile upstream at datum 0.80 ft higher. Oct. 1, 1955, to Sept. 30, 1969, at present site and datum 0.31 ft lower.

AVERAGE DISCHARGE.--24 years, 53.9 cfs (5.50 inches per year, 39,050 acre-ft per year); median of yearly mean discharges, 34 cfs (3.5 inches per year, 24,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,350 cfs June 8 (gage height, 8.90 ft); minimum daily, 3.7 cfs Feb. 7-8.

Period of record: Maximum discharge, 5,960 cfs June 19, 1954 (gage height, 11.2 ft, from floodmark, site and datum then in use); maximum gage height, 10.67 ft Sept. 6, 1965 (backwater from ice); minimum daily discharge, 0.2 cfs Feb. 22-26, 1959.

Flood in June 1944 reached a stage of about 10 ft, from information by local residents, former site and datum.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used June 12-14; stage-discharge relation affected by ice Nov. 23-26, Dec. 1-5, Dec. 10 to Mar. 16).

2.52	3.7	4.0	122
2.6	6.3	6.0	368
2.7	10	7.0	540
3.0	28	8.0	815
3.5	72	9.0	1,450

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	27	30	14	5.5	4.6	33	107	42	38	46	20
2	9.0	26	32	14	4.8	4.8	34	193	37	39	55	18
3	6.7	25	31	14	4.5	5.0	32	173	35	35	51	16
4	5.4	21	31	13	4.2	5.2	28	129	32	31	44	16
5	5.0	19	31	14	4.0	27	30	111	56	30	40	15
6	4.8	19	31	14	3.8	75	32	114	78	29	42	15
7	3.7	18	31	15	3.7	196	33	109	59	30	38	16
8	4.1	16	31	15	3.7	218	29	97	9.0	34	37	19
9	4.6	14	31	15	3.8	206	31	85	1,060	53	34	16
10	4.4	13	34	15	3.9	190	34	75	747	55	30	15
11	4.8	12	37	15	4.0	180	34	70	552	47	31	18
12	4.2	11	43	15	4.0	196	36	68	387	44	27	19
13	4.5	10	33	14	4.0	210	39	67	258	40	25	20
14	4.0	10	30	13	4.0	222	37	61	184	50	23	18
15	4.9	14	31	12	4.0	230	37	57	149	88	20	17
16	4.4	42	33	12	4.0	150	45	52	124	77	19	15
17	4.4	77	36	13	4.0	135	52	50	112	152	19	14
18	4.8	126	33	13	3.9	114	53	47	100	258	18	13
19	7.9	104	30	13	3.9	96	46	43	91	187	17	12
20	6.4	81	28	12	3.8	91	45	41	97	133	14	17
21	5.7	59	25	11	3.8	84	59	39	86	101	15	27
22	5.9	48	26	10	3.9	68	82	36	74	81	14	21
23	5.4	42	22	9.3	4.0	56	74	35	65	68	14	16
24	5.4	38	20	8.5	4.1	50	63	36	59	56	15	16
25	4.7	36	18	7.6	4.2	45	57	34	54	48	21	157
26	5.2	36	17	7.2	4.2	41	51	34	50	53	50	392
27	13	38	16	6.6	4.3	38	49	35	45	52	44	350
28	13	40	15	6.2	4.4	37	49	46	48	48	32	271
29	11	38	14	6.0	4.4	35	51	67	45	44	28	245
30	27	35	14	6.0	------	36	53	54	42	40	23	185
31	37	------	14	5.9	------	36	------	45	------	37	22	------
TOTAL	237.9	1,095	848	359.3	118.8	3,081.6	1,328	2,210	4,777.0	2,078	908	2,009
MEAN	7.67	36.5	27.4	11.6	4.10	99.4	44.3	71.3	159	67.0	29.3	67.0
MAX	37	126	43	15	5.5	230	82	193	1,060	258	55	392
MIN	3.7	10	14	5.9	3.7	4.6	28	34	9.0	29	14	12
CFSM	.06	.27	.21	.09	.03	.75	.33	.54	1.20	.50	.22	.50
IN.	.07	.31	.24	.10	.03	.86	.37	.62	1.34	.58	.25	.56
AC-FT	472	2,170	1,680	713	236	6,110	2,630	4,380	9,480	4,120	1,800	3,980

CAL YR 1971 TOTAL 23,494.8 MEAN 64.4 MAX 530 MIN 2.9 CFSM .48 IN 6.57 AC-FT 46,600
WTR YR 1972 TOTAL 19,050.6 MEAN 52.1 MAX 1,060 MIN 3.7 CFSM .39 IN 5.33 AC-FT 37,790

PEAK DISCHARGE (BASE, 700 CFS).--June 8 (1900) 1,350 cfs (8.90 ft).

05449500 IOWA RIVER NEAR ROWAN, IOWA

LOCATION.--Lat 42°45'36", long 93°37'23", in NW1/4 NE1/4 sec.25, T.92 N., R.24 W., Wright County, on left bank 10 ft downstream from bridge on county highway C38, 0.9 mile downstream from Drainage ditch 123, 3.8 miles northwest of Rowan, 10.7 miles downstream from confluence of East and West Branches, and at mile 316.4.
DRAINAGE AREA.--429 sq mi.
PERIOD OF RECORD.--October 1940 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,143.35 ft above mean sea level. Prior to Oct. 14, 1948, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--32 years, 183 cfs (5.79 inches per year, 132,600 acre-ft per year); median of yearly mean discharges, 160 cfs (5.1 inches per year, 116,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 2,790 cfs June 10 (gage height, 11.25 ft); minimum daily, 21 cfs Feb. 5-9.

Period of record: Maximum discharge, 8,460 cfs June 21, 1954 (gage height, 14.88 ft); minimum daily, 2.9 cfs Jan. 21-23, 1959.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1308: 1942-43 (M). WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Apr. 30, May 1, 10-17, 29-31, June 8-15, 23-30, July 4, 10, 11, 14, 15, 23-25, Aug. 2-4; stage-discharge relation affected by ice Dec. 13 to Mar. 13).

3.15	21	5.0	220	9.0	1,210
3.5	50	6.0	378	10.0	1,860
4.0	99	8.0	835	11.0	2,790

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	187	149	80	26	540	122	224	173	169	137	64
2	55	196	161	80	24	490	116	389	153	167	240	61
3	46	177	160	78	23	420	111	526	137	162	225	58
4	40	148	159	76	22	350	112	488	125	186	186	56
5	36	126	151	74	21	315	106	401	125	167	157	56
6	33	109	148	76	21	290	109	418	144	144	149	55
7	30	90	143	77	21	550	111	449	171	133	138	54
8	30	111	140	80	21	580	109	407	614	128	131	53
9	29	89	132	81	21	510	101	355	2,030	139	123	55
10	30	83	140	83	22	485	105	307	2,660	202	113	55
11	29	80	140	82	22	455	111	269	2,330	206	103	55
12	29	77	139	81	22	500	111	249	1,980	269	100	57
13	30	75	154	77	22	560	115	236	1,800	330	91	93
14	30	70	176	71	22	642	121	236	1,740	246	84	79
15	30	68	150	67	22	688	119	215	1,310	241	80	68
16	28	73	136	62	22	705	124	197	892	327	74	63
17	29	160	136	64	22	648	141	184	639	385	71	59
18	29	377	152	66	22	417	151	171	511	657	68	56
19	30	447	140	65	22	322	154	161	431	783	65	53
20	32	363	128	60	23	274	142	148	397	660	63	51
21	36	277	121	55	23	251	145	139	402	466	61	52
22	35	223	112	50	24	232	185	131	351	347	59	60
23	33	192	108	47	24	189	230	123	303	277	58	56
24	33	181	98	43	25	160	220	157	263	239	57	53
25	33	173	99	40	25	152	195	150	236	199	75	112
26	32	165	92	36	34	148	177	133	217	171	106	504
27	41	167	87	34	90	135	165	141	199	168	103	751
28	60	168	85	31	120	124	162	153	188	167	94	850
29	66	168	83	28	200	124	164	197	186	159	80	919
30	121	157	80	28	------	122	177	229	189	147	71	765
31	192	------	80	27	------	121	------	200	------	131	66	------
TOTAL	1,347	4,977	3,979	1,899	1,008	11,499	4,211	7,783	20,896	8,172	3,228	5,323
MEAN	43.5	166	128	61.3	34.8	371	140	251	697	264	104	177
MAX	192	447	176	83	200	705	230	526	2,660	783	240	919
MIN	28	68	80	27	21	121	101	123	125	128	57	51
CFSM	.10	.39	.30	.14	.08	.86	.33	.59	1.62	.62	.24	.41
IN.	.12	.43	.35	.16	.09	1.00	.37	.67	1.81	.71	.28	.46
AC-FT	2,670	9,870	7,890	3,770	2,000	22,810	8,350	15,440	41,450	16,210	6,400	10,560

CAL YR 1971 TOTAL 79,111 MEAN 217 MAX 2,320 MIN 13 CFSM .51 IN 6.86 AC-FT 156,900
WTR YR 1972 TOTAL 74,322 MEAN 203 MAX 2,660 MIN 21 CFSM .47 IN 6.44 AC-FT 147,400

PEAK DISCHARGE (BASE, 1,200 CFS).--June 10 (1030) 2,790 cfs (11.25 ft).

05451500 IOWA RIVER AT MARSHALLTOWN, IOWA

LOCATION.--Lat 42°04'00", long 92°54'18", in SE1/4 SE1/4 sec.23, T.84 N., R.18 W., Marshall County, on right bank in city park in Marshalltown, 600 ft upstream from Burnett Creek, 900 ft downstream from bridge on State Highway 14, 2.0 miles upstream from Linn Creek, and at mile 222.6.

DRAINAGE AREA.--1,564 sq mi., including that of Burnett Creek.

PERIOD OF RECORD.--October 1902 to September 1903, October 1914 to September 1927, October 1932 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 853.10 ft above mean sea level. See WSP 1728 for history of changes prior to Sept. 21, 1934.

AVERAGE DISCHARGE.--54 years (1902-3, 1914-27, 1932-72), 734 cfs (6.37 inches per year, 531,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 10,900 cfs June 14 (gage height, 17.55 ft); minimum daily, 64 cfs Feb. 9.

Period of record: Maximum discharge, 42,000 cfs June 4, 1918 (gage height, 17.74 ft, from floodmark), from rating curve extended above 19,000 cfs on basis of velocity-area study; maximum gage height, 19.37 ft July 9, 1969; minimum daily discharge, 9 cfs Jan. 9, 10, 1949.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1915-18, 1919 (M), 1920, 1921-23 (M), 1924-27, 1933, 1934 (M), 1936, 1938, 1947 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Aug. 4-15; stage-discharge relation affected by ice Dec. 12-14, 18-23, Dec. 26 to Mar. 13).

Oct. 1 to June 6

5.7	59	9.0	1,180
6.0	120	11.0	2,370
6.5	250	12.0	3,170
7.5	550		

June 7 to Sept. 30

7.0	460	14.0	4,770
8.0	880	16.0	7,400
11.0	2,450	17.5	10,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	216	207	220	86	2,200	450	595	599	1,070	707	614
2	93	319	233	210	86	1,300	433	695	572	1,060	4,290	602
3	94	367	274	190	84	1,400	418	779	525	1,060	4,230	582
4	90	311	307	180	80	1,400	397	831	483	952	2,590	562
5	90	289	299	170	77	1,200	379	900	670	851	1,920	546
6	95	277	287	160	74	1,300	370	1,190	2,720	861	4,800	523
7	96	243	271	150	70	2,500	371	3,120	2,740	1,100	5,280	590
8	96	219	275	145	67	1,400	353	3,050	4,380	801	4,840	714
9	90	203	275	150	64	1,100	347	2,380	6,620	790	4,260	642
10	85	186	275	155	66	1,000	347	1,880	5,660	714	3,020	590
11	85	185	284	160	67	950	343	1,540	3,890	751	2,400	848
12	84	179	260	160	68	1,100	336	1,290	3,700	1,370	1,970	1,040
13	87	163	160	150	69	1,150	344	1,120	6,590	1,470	1,670	974
14	89	155	190	130	70	1,180	346	1,020	10,000	1,230	1,440	1,060
15	89	152	259	120	70	1,200	344	928	9,910	1,350	1,260	1,060
16	88	143	323	110	71	1,220	444	847	7,140	1,190	1,120	930
17	88	146	295	115	72	1,150	581	771	5,430	1,120	1,010	813
18	87	165	250	120	73	1,140	551	719	4,380	1,460	922	724
19	100	179	230	120	75	1,170	519	662	3,570	1,490	835	659
20	110	252	280	115	77	1,200	487	689	3,900	1,610	763	639
21	107	378	300	110	81	945	496	599	3,030	1,560	703	644
22	100	414	330	105	86	748	519	535	2,400	1,490	664	688
23	98	394	310	100	90	687	500	448	2,030	1,360	650	647
24	93	354	293	97	95	629	484	525	1,780	1,170	619	642
25	89	321	267	93	100	575	494	546	1,580	936	632	642
26	88	302	250	90	120	519	499	534	1,410	1,250	812	812
27	99	293	220	86	140	577	465	673	1,270	1,170	848	1,760
28	111	288	170	82	250	593	456	575	1,360	864	790	2,170
29	126	286	180	80	1,100	578	483	570	1,420	769	758	2,700
30	145	284	200	82	------	487	525	638	1,200	711	700	3,240
31	185	------	210	84	------	469	------	594	------	655	642	------
TOTAL	3,059	7,663	7,964	4,039	3,528	33,067	13,081	31,243	100,959	34,235	57,145	28,657
MEAN	98.7	255	257	130	122	1,067	436	1,008	3,365	1,104	1,843	955
MAX	185	414	330	220	1,100	2,500	581	3,120	10,000	1,610	5,280	3,240
MIN	82	143	160	80	64	469	336	448	483	655	619	523
CFSM	.06	.16	.16	.08	.08	.68	.28	.64	2.15	.71	1.18	.61
IN.	.07	.18	.19	.10	.08	.79	.31	.74	2.40	.81	1.36	.68
AC-FT	6,070	15,200	15,800	8,010	7,000	65,590	25,950	61,970	200,300	67,910	113,300	56,840

CAL YR 1971 TOTAL 297,346 MEAN 815 MAX 10,800 MIN 81 CFSM .52 IN 7.07 AC-FT 589,800
WTR YR 1972 TOTAL 324,640 MEAN 887 MAX 10,000 MIN 64 CFSM .57 IN 7.72 AC-FT 643,900

PEAK DISCHARGE (BASE, 5,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
6-9	1915	15.65	6,840	8-2	2130	14.69	5,530
6-14	1715	17.55	10,900	8-6	2215	15.26	5,850

05451700 TIMBER CREEK NEAR MARSHALLTOWN, IOWA

LOCATION.--Lat 42°00'25", long 92°51'15", in SE1/4 SW1/4 sec.8, T.83 N., R.17 W., Marshall County, on left bank 20 ft downstream from bridge on U.S. Highway 30, 3.5 miles upstream from mouth, and 4.1 miles southeast of court house in Marshalltown.

DRAINAGE AREA.--118 sq mi.

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 849.44 ft above mean sea level.

AVERAGE DISCHARGE.--23 years, 58.2 cfs (6.70 inches per year, 42,170 acre-ft per year); median of yearly mean discharges, 65 cfs (7.5 inches per year, 47,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,760 cfs June 13 (gage height, 15.08 ft); minimum daily, 2.2 cfs Jan. 28.

Period of record: Maximum discharge, 5,940 cfs May 18, 1970 (gage height, 16.66 ft); no flow July 24-26, Oct. 4-12, 1956.

Flood in June 1947 reached a stage of 16.8 ft (discharge, 5,700 cfs).

REMARKS.--Records good except those for winter period, which are poor.

COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1708: 1950-55, 1957-59.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	15	4.9	5.6	2.6	700	20	48	36	76	132	48
2	2.5	44	5.4	4.5	2.6	150	18	44	36	86	207	49
3	3.3	15	4.9	3.5	2.6	80	17	39	35	66	118	46
4	3.4	7.0	5.2	3.0	2.6	45	16	34	35	62	94	45
5	3.1	5.8	5.8	2.7	2.6	30	16	33	70	59	153	43
6	3.3	4.9	6.3	3.0	2.5	110	16	50	94	57	726	41
7	3.7	3.9	7.0	3.8	2.4	600	16	181	64	55	540	61
8	4.2	4.3	7.5	5.0	2.4	130	14	228	346	52	851	81
9	4.0	4.5	7.8	20	2.4	80	14	155	167	55	357	47
10	3.6	4.9	8.6	17	2.6	62	14	123	113	49	242	65
11	4.1	5.2	17	14	2.9	54	13	103	86	47	226	144
12	3.5	4.9	13	11	3.3	45	13	90	302	68	229	139
13	3.4	4.7	11	7.0	3.8	28	14	84	2,600	309	176	166
14	3.6	4.5	11	4.5	4.1	27	13	77	2,320	96	145	105
15	3.9	4.3	13	3.0	4.4	27	13	68	838	78	126	85
16	3.4	4.1	15	5.0	4.7	30	40	61	357	60	115	75
17	3.9	3.9	12	10	5.0	24	49	55	276	181	103	68
18	3.9	4.7	10	12	5.4	20	32	50	229	273	93	62
19	3.9	4.7	9.0	8.0	5.6	19	29	45	279	131	86	57
20	4.3	4.7	8.0	5.0	5.8	19	31	44	327	105	78	56
21	5.4	4.1	7.5	3.5	6.2	20	54	42	193	82	73	56
22	4.9	3.8	7.0	3.0	6.4	21	83	38	159	71	69	51
23	4.5	3.4	8.0	2.9	6.7	17	57	36	138	63	67	50
24	3.9	3.9	9.0	2.7	7.0	16	45	42	123	66	65	51
25	4.1	4.5	8.0	2.5	9.0	16	40	39	114	58	78	48
26	3.6	5.8	6.8	2.4	11	15	36	37	104	385	73	63
27	5.4	6.8	5.8	2.3	25	20	33	37	95	207	63	49
28	5.8	6.5	5.0	2.2	300	27	33	37	198	116	57	232
29	5.8	6.5	5.2	2.3	1,100	24	35	41	95	95	54	221
30	9.4	5.4	5.4	2.4	------	21	36	40	83	80	50	97
31	11	------	5.8	2.5	------	20	------	36	------	70	49	------
TOTAL	135.3	205.7	255.9	176.3	1,541.6	2,497	860	2,037	9,912	3,258	5,495	2,401
MEAN	4.36	6.86	8.25	5.69	53.2	80.5	28.7	65.7	330	105	177	80.0
MAX	11	44	17	20	1,100	700	83	228	2,600	385	851	232
MIN	2.5	3.4	4.9	2.2	2.4	15	13	33	35	47	49	41
CFSM	.04	.06	.07	.05	.45	.68	.24	.56	2.80	.89	1.50	.68
IN.	.04	.06	.08	.06	.49	.79	.27	.64	3.12	1.03	1.73	.76
AC-FT	268	408	508	350	3,060	4,950	1,710	4,040	19,660	6,460	10,900	4,760

CAL YR 1971 TOTAL 25,499.1 MEAN 69.9 MAX 1,900 MIN 2.3 CFSM .59 IN 8.04 AC-FT 50,580
WTR YR 1972 TOTAL 28,774.8 MEAN 78.6 MAX 2,600 MIN 2.2 CFSM .67 IN 9.07 AC-FT 57,070

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-1	--	--	* 1,300	8-8	1245	11.28	1,320
6-13	1130	15.08	3,760				

* About

05451900 RICHLAND CREEK NEAR HAVEN, IOWA

LOCATION.--Lat 41°53'58", long 92°28'27", in SE1/4 NE1/4 sec.21, T.82 N., R.14 W., Tama County, on right bank 5 ft upstream from bridge on county highway, 0.6 mile northeast of Haven, and 2.8 miles upstream from mouth.

DRAINAGE AREA.--56.1 sq mi.

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 798.69 ft above mean sea level.

AVERAGE DISCHARGE.--23 years, 29.5 cfs (7.14 inches per year, 21,370 acre-ft per year); median of yearly mean discharges, 30 cfs (7.3 inches per year, 21,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,330 cfs June 13 (gage height, 18.63 ft); maximum gage height, 18.91 ft Feb. 29 (backwater from ice); minimum daily discharge, 0.90 cfs Jan. 28.

Period of record: Maximum discharge, 3,650 cfs Mar. 30, 1960 (gage height, 12.39 ft); minimum daily, 0.1 cfs on several days in 1949, 1953-54, 1956.

Flood in June 1918 reached a stage of 14.3 ft, present gage datum (discharge not determined).

REMARKS.--Records good except those for winter period, which are fair.

COOPERATION.--One discharge measurement furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1708: 1950-55, 1956 (M), 1957, 1958 (M), 1959.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	16	1.9	3.5	.98	100	15	34	14	36	46	30
2	1.0	26	1.9	3.0	1.0	50	13	32	12	34	68	24
3	1.4	7.6	2.6	2.5	.98	44	9.6	28	11	30	40	21
4	1.2	5.3	2.7	2.0	.96	39	9.2	25	10	29	33	20
5	1.0	3.8	3.3	1.4	.94	35	12	24	34	28	82	20
6	1.0	3.1	3.9	1.5	.92	110	12	34	26	27	423	19
7	1.0	1.1	4.0	2.0	.92	160	11	96	17	27	97	20
8	1.0	1.8	3.7	2.5	.92	32	8.9	101	271	26	327	18
9	1.0	3.7	3.6	3.5	.92	19	9.8	76	89	25	114	16
10	1.0	3.2	7.1	2.8	1.0	16	9.0	57	52	23	86	20
11	1.0	3.0	8.3	2.3	1.2	18	8.2	48	40	22	78	27
12	1.0	2.0	4.5	1.9	1.4	21	8.3	43	34	44	74	30
13	1.1	1.7	2.5	1.6	1.6	18	8.6	42	967	32	63	29
14	1.1	2.4	4.4	1.3	1.8	19	8.0	40	541	27	54	22
15	1.1	3.2	29	1.0	2.0	20	8.2	36	156	26	48	20
16	1.2	3.0	19	1.2	2.2	27	54	32	95	23	49	17
17	1.2	3.5	7.8	1.5	2.3	18	46	29	77	52	44	17
18	1.2	5.6	6.0	1.8	2.4	16	32	27	68	99	39	16
19	1.5	3.8	6.5	2.1	2.5	15	30	25	62	43	36	15
20	5.0	3.0	7.0	1.7	2.7	15	28	23	69	37	33	15
21	5.5	2.3	6.5	1.5	2.9	16	64	22	49	32	31	15
22	2.7	1.7	6.0	1.4	3.1	19	78	21	44	29	29	13
23	1.7	2.4	7.0	1.3	3.3	15	54	19	40	28	29	14
24	1.9	3.2	7.4	1.1	4.0	15	43	25	37	26	28	14
25	2.0	3.0	6.5	1.0	5.0	14	36	21	34	25	33	13
26	2.1	3.3	5.0	.96	7.0	14	32	18	32	118	30	14
27	3.7	3.9	4.0	.92	12	18	28	17	30	49	26	12
28	4.3	2.9	3.0	.90	300	24	31	17	93	35	24	22
29	3.9	2.6	3.1	.92	600	24	32	20	41	31	22	31
30	7.7	2.4	3.2	.94	------	20	32	17	36	27	21	14
31	7.0	------	3.3	.96	------	17	------	14	------	25	24	------
TOTAL	68.7	130.5	184.7	53.00	966.94	988	770.8	1,063	3,081	1,115	2,131	578
MEAN	2.22	4.35	5.96	1.71	33.3	31.9	25.7	34.3	103	36.0	68.7	19.3
MAX	7.7	26	29	3.5	600	160	78	101	967	118	423	31
MIN	1.0	1.1	1.9	.90	.92	14	8.0	14	10	22	21	12
CFSM	.04	.08	.11	.03	.59	.57	.46	.61	1.84	.64	1.22	.34
IN.	.05	.09	.12	.04	.64	.66	.51	.70	2.04	.74	1.41	.38
AC-FT	136	259	366	105	1,920	1,960	1,530	2,110	6,110	2,210	4,230	1,150

CAL YR 1971 TOTAL 10,150.78 MEAN 27.8 MAX 1,000 MIN .48 CFSM .50 IN 6.73 AC-FT 20,130
WTR YR 1972 TOTAL 11,130.64 MEAN 30.4 MAX 967 MIN .90 CFSM .54 IN 7.38 AC-FT 22,080

PEAK DISCHARGE (BASE, 1,000 CFS).--June 13 (1800) 1,330 cfs (18.63 ft).

05452000 SALT CREEK NEAR ELBERON, IOWA

LOCATION.--Lat 41°57'51", long 92°18'47", in NW1/4 NW1/4 sec.36, T.83 N., R.13 W., Tama County, near center of span on downstream side of bridge on U.S. Highway 30, 2.0 miles upstream from Hog Run, 3.0 miles south of Elberon, and 9.0 miles upstream from mouth.

DRAINAGE AREA.--201 sq mi.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 781.58 ft above mean sea level (Iowa Highway Commission bench mark). Prior to Oct. 15, 1945, and June 14, 1947, to Feb. 10, 1949, nonrecording gage on upstream side of bridge at present datum.

AVERAGE DISCHARGE.--27 years, 116 cfs (7.84 inches per year, 84,040 acre-ft per year); median of yearly mean discharges, 100 cfs (6.8 inches per year, 72,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, about 1,700 cfs Feb. 29 (gage height, 14.65 ft, backwater from ice); minimum daily, 3.3 cfs Jan. 28.

Period of record: Maximum discharge observed, 35,000 cfs June 13, 1947 (gage height, 17.6 ft) from rating curve extended above 17,000 cfs; maximum gage height, 17.78 ft July 18, 1969; minimum daily discharge, 2.4 cfs Jan. 16-29, 1954.

Flood of June 16, 1944, reached a stage of 19.9 ft, from floodmark at downstream side of bridge (discharge, about 10,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1946.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	21	9.5	14	3.8	1,200	38	144	97	83	160	86
2	8.9	77	12	13	3.9	100	33	138	90	81	280	72
3	9.0	27	11	11	3.9	70	29	125	84	70	130	66
4	8.7	16	12	8.5	3.9	35	26	119	77	64	110	63
5	8.7	14	14	6.6	3.8	30	32	110	129	61	500	61
6	8.6	12	15	5.7	3.7	80	33	120	167	96	1,500	58
7	8.8	7.3	17	6.1	3.6	800	29	273	123	133	350	84
8	11	10	17	9.1	3.5	130	28	398	192	76	1,000	107
9	11	13	16	35	3.5	80	27	294	237	72	380	69
10	9.7	14	23	30	3.5	67	27	235	170	62	258	76
11	9.7	12	41	23	3.8	76	26	205	140	59	251	123
12	9.3	11	27	16	4.2	84	25	186	130	350	221	117
13	9.6	11	15	10	4.6	74	27	187	456	200	223	102
14	9.9	11	22	6.5	5.0	82	24	185	561	130	196	83
15	9.8	10	92	4.0	5.5	76	24	179	372	110	190	74
16	9.6	10	65	5.0	6.0	100	181	155	241	100	182	70
17	9.7	10	25	6.0	6.5	72	193	142	213	120	169	66
18	9.6	13	22	7.0	7.0	60	122	130	189	300	154	60
19	10	12	24	8.0	8.0	56	98	121	177	140	142	57
20	12	11	25	7.0	9.0	54	94	115	200	120	132	59
21	13	8.3	22	6.0	10	58	156	108	174	110	115	58
22	12	6.5	18	5.5	11	65	249	102	163	100	89	52
23	11	9.6	21	5.0	12	50	162	98	150	95	90	53
24	10	9.9	23	4.5	13	45	130	127	139	90	87	54
25	9.9	13	19	4.0	15	42	111	102	131	86	113	53
26	9.8	13	19	3.8	18	40	99	93	114	400	103	74
27	11	16	8.8	3.6	22	50	90	90	90	160	88	65
28	13	14	9.5	3.3	350	66	117	87	127	110	78	198
29	12	10	10	3.5	1,400	66	144	111	119	94	71	812
30	16	14	11	3.6	------	55	138	142	93	86	66	200
31	17	------	13	3.7	------	45	------	107	------	80	65	------
TOTAL	327.5	436.6	678.8	278.0	1,947.7	3,908	2,512	4,728	5,345	3,838	7,493	3,172
MEAN	10.6	14.6	21.9	8.97	67.2	126	83.7	153	178	124	242	106
MAX	17	77	92	35	1,400	1,200	249	398	561	400	1,500	812
MIN	8.6	6.5	8.8	3.3	3.5	30	24	87	77	59	65	52
CFSM	.05	.07	.11	.04	.33	.63	.42	.76	.89	.62	1.20	.53
IN.	.06	.08	.13	.05	.36	.72	.46	.88	.99	.71	1.39	.59
AC-FT	650	866	1,350	551	3,860	7,750	4,980	9,380	10,600	7,610	14,860	6,290

CAL YR 1971 TOTAL 34,011.6 MEAN 93.2 MAX 2,200 MIN 6.5 CFSM .46 IN 6.29 AC-FT 67,460
WTR YR 1972 TOTAL 34,664.6 MEAN 94.7 MAX 1,500 MIN 3.3 CFSM .47 IN 6.42 AC-FT 68,760

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-29	--	--	* 1,700	9-29	0445	12.88	1,550
8-6	--	--	* 1,600				

* About.

05452200 WALNUT CREEK NEAR HARTWICK, IOWA

LOCATION.--Lat 41°50'06", long 92°23'10", in SE1/4 SW1/4 sec.8, T.81 N., R.13 W., Poweshiek County, on left bank 5 ft upstream from bridge on county highway V21, 1.2 miles downstream from North Walnut Creek, 4.0 miles northwest of Hartwick, and 6.5 miles upstream from mouth.

DRAINAGE AREA.--70.9 sq mi.

PERIOD OF RECORD: October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 786.59 ft above mean sea level.

AVERAGE DISCHARGE.--23 years, 37.3 cfs (7.14 inches per year, 27,020 acre-ft per year); median of yearly mean discharges, 36 cfs (6.9 inches per year, 26,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,050 cfs Aug. 6 (gage height, 13.79 ft); maximum gage height, 14.78 ft Feb. 28 (backwater from ice); minimum daily discharge, 0.83 cfs Oct. 6, 7.

Period of record: Maximum discharge, 4,930 cfs Sept. 3, 1958 (gage height, 15.67 ft), from rating curve extended above 2,600 cfs on basis of contracted-opening and flow-over-embankment measurement of peak flow; no flow at times for most years.

Flood in June 1947 reached a stage of 17.7 ft, from information by local residents (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor.

REVISIONS (WATER YEARS).--WSP 1558: 1950 (P), 1951-57.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	15	2.0	4.2	1.8	50	14	75	27	34	47	412
2	1.0	19	2.2	3.4	1.9	27	14	63	25	35	83	90
3	1.0	4.3	2.5	2.7	1.9	22	13	54	23	30	69	61
4	.95	3.0	2.6	2.0	1.9	17	12	49	22	28	54	49
5	.95	2.7	2.7	1.6	1.8	15	12	48	39	26	151	42
6	.83	2.2	3.1	1.8	1.8	50	11	57	44	26	792	37
7	.83	1.9	3.1	3.0	1.7	60	11	195	31	33	160	37
8	1.0	2.1	2.7	6.0	1.7	15	12	270	153	26	395	32
9	.95	2.6	2.6	10	1.6	11	9.8	177	99	24	160	28
10	.95	2.4	5.9	7.4	1.6	9.5	9.2	133	67	22	117	38
11	.95	2.3	6.5	5.8	1.7	12	8.5	109	56	26	99	46
12	.95	2.1	3.7	4.8	1.9	11	8.8	94	52	46	97	65
13	1.0	1.9	3.9	4.0	2.2	13	8.5	92	642	35	79	58
14	1.1	1.9	4.2	3.5	2.6	12	10	87	411	29	67	42
15	1.0	1.7	49	3.0	3.0	25	9.8	78	164	45	57	37
16	1.0	1.8	13	3.5	3.5	20	133	67	113	35	52	33
17	1.0	1.8	9.7	4.0	3.8	14	79	59	95	42	46	29
18	1.0	3.3	10	4.5	4.1	12	52	52	84	124	41	27
19	1.2	2.1	8.0	3.8	4.4	13	45	47	92	94	37	25
20	1.6	1.7	6.4	2.7	4.8	13	43	44	101	70	34	26
21	2.0	1.5	5.4	2.2	5.2	15	130	41	74	57	31	25
22	1.3	1.5	4.5	2.1	5.8	14	116	38	63	47	29	22
23	1.1	1.4	5.2	2.0	6.6	12	78	36	56	37	29	21
24	1.1	2.0	4.5	1.9	9.0	11	62	51	51	37	27	21
25	1.1	2.3	4.0	1.8	12	10	54	38	48	35	57	20
26	1.1	2.4	4.2	1.6	25	10	48	34	44	82	43	19
27	1.6	2.7	4.4	1.5	45	17	43	32	41	77	31	18
28	1.6	2.2	3.3	1.4	700	17	60	33	60	53	26	24
29	1.6	2.1	3.5	1.5	350	16	59	43	42	43	24	32
30	3.5	2.5	4.5	1.6	------	15	62	34	37	37	22	22
31	2.2	------	5.0	1.7	------	14	------	29	------	32	168	------
TOTAL	38.46	96.4	192.3	101.0	1,208.3	572.5	1,227.6	2,259	2,856	1,367	3,124	1,438
MEAN	1.24	3.21	6.20	3.26	41.7	18.5	40.9	72.9	95.2	44.1	101	47.9
MAX	3.5	19	49	10	700	60	133	270	642	124	792	412
MIN	.83	1.4	2.0	1.4	1.6	9.5	8.5	29	22	22	22	18
CFSM	.02	.05	.09	.05	.59	.26	.58	1.03	1.34	.62	1.42	.68
IN.	.02	.05	.10	.05	.63	.30	.64	1.19	1.50	.72	1.64	.75
AC-FT	76	191	381	200	2,400	1,140	2,430	4,480	5,660	2,710	6,200	2,850

CAL YR 1971 TOTAL 11,394.46 MEAN 31.2 MAX 1,100 MIN .83 CFSM .44 IN 5.98 AC-FT 22,600
WTR YR 1972 TOTAL 14,480.56 MEAN 39.6 MAX 792 MIN .83 CFSM .56 IN 7.60 AC-FT 28,720

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-28	--	--	* 1,800	8-8	0630	11.14	1,000
6-13	2345	12.84	1,560	8-31	2330	13.34	1,790
8-6	0230	13.79	2,050				

* About

05453000 BIG BEAR CREEK AT LADORA, IOWA

LOCATION.--Lat 41°44'58", long 92°10'55", in SW1/4 SW1/4 sec.7, T.80 N., R.11 W., Iowa County, on left bank 10 ft downstream from bridge on county highway V52, 0.4 mile south of Ladora, 1.2 miles downstream from Coats Creek, 2.8 miles upstream from Little Bear Creek, and 8.1 miles upstream from mouth.

DRAINAGE AREA.--189 sq mi.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1966, published as Bear Creek at Ladora.

GAGE.--Water-stage recorder. Datum of gage is 754.94 ft above mean sea level. Prior to June 26, 1946, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 108 cfs (7.76 inches per year, 78,250 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,330 cfs Aug. 6 (gage height, 12.60 ft); minimum daily, 2.9 cfs Oct. 7.

Period of record: Maximum discharge, 10,500 cfs Mar. 30, 1960 (gage height, 14.60 ft); no flow Jan. 22 to Feb. 8, 1956.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1308: 1947 (M). WSP 1438: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	41	6.6	31	7.4	300	62	382	131	123	283	803
2	7.7	176	9.0	25	7.2	90	59	288	122	136	410	259
3	4.3	46	10	18	7.0	80	46	234	111	123	202	178
4	4.6	24	12	13	6.8	68	46	201	102	102	155	150
5	6.8	20	13	10	6.6	60	46	186	128	97	346	135
6	6.6	16	14	11	6.6	80	45	219	158	96	3,580	123
7	2.9	13	15	16	6.6	350	44	757	122	131	940	114
8	4.8	12	15	28	6.4	90	38	951	727	105	925	110
9	4.3	11	15	60	6.4	56	41	591	446	93	493	98
10	4.9	9.2	19	50	6.8	51	37	428	268	87	354	103
11	5.9	10	30	37	7.2	54	36	350	212	82	294	141
12	5.8	10	21	24	7.6	73	35	301	189	96	254	152
13	5.2	11	13	15	8.0	93	36	291	1,490	122	236	205
14	5.7	10	12	11	8.3	73	40	273	1,090	100	199	147
15	7.5	9.2	180	9.0	8.6	94	54	262	633	157	173	130
16	7.1	8.3	117	10	9.0	134	421	223	398	96	159	121
17	7.0	11	62	12	9.4	85	359	198	305	133	146	111
18	7.4	13	70	15	10	69	230	181	261	521	133	101
19	7.1	12	80	13	11	60	188	165	279	197	123	95
20	8.9	9.1	75	11	12	57	181	156	445	175	116	96
21	12	8.0	60	9.4	13	58	438	146	245	135	110	93
22	9.3	5.9	52	8.4	14	66	525	137	207	117	105	84
23	8.3	8.2	50	7.6	16	59	325	131	186	119	101	82
24	7.5	8.7	46	7.2	18	55	257	158	171	117	97	82
25	7.0	8.7	39	6.8	20	53	215	135	161	102	119	78
26	6.2	8.8	35	6.4	30	51	188	122	151	572	138	74
27	7.5	9.2	24	6.2	70	56	167	116	142	284	106	71
28	8.2	9.2	28	6.0	900	68	189	172	221	159	95	81
29	9.0	10	30	6.4	1,200	70	220	406	162	134	89	111
30	10	14	32	6.8	------	66	241	195	133	116	83	84
31	12	------	34	7.2	------	64	------	149	------	100	137	------
TOTAL	220.0	562.5	1,218.6	497.4	2,439.9	2,683	4,809	8,504	9,396	4,727	10,701	4,212
MEAN	7.10	18.8	39.3	16.0	84.1	86.5	160	274	313	152	345	140
MAX	12	176	180	60	1,200	350	525	951	1,490	572	3,580	803
MIN	2.9	5.9	6.6	6.0	6.4	51	35	116	102	82	83	71
CFSM	.04	.10	.21	.08	.45	.46	.85	1.45	1.66	.80	1.83	.74
IN.	.04	.11	.24	.10	.48	.53	.95	1.67	1.85	.93	2.11	.83
AC-FT	436	1,120	2,420	987	4,840	5,320	9,540	16,870	18,640	9,380	21,230	8,350

CAL YR 1971 TOTAL 36,033.3 MEAN 98.7 MAX 4,100 MIN 2.9 CFSM .52 IN 7.09 AC-FT 71,470
WTR YR 1972 TOTAL 49,970.4 MEAN 137 MAX 3,580 MIN 2.9 CFSM .72 IN 9.84 AC-FT 99,120

PEAK DISCHARGE (BASE, 2,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-29	--	--	* 2,500	8-6	1200	12.60	4,330
6-13	1200	10.00	2,920				

* About

05453100 IOWA RIVER AT MARENGO, IOWA

LOCATION.--Lat 41°48'41", long 92°03'42", in SW1/4 NE1/4 sec.24, T.81 N., R.11 W., Iowa County, on right bank 10 ft downstream from abandoned highway bridge, 0.7 mile downstream from Big Bear Creek, 0.8 mile north of Marengo, 4.9 miles upstream from Hilton Creek, and at mile 139.4.

DRAINAGE AREA.--2,794 sq mi.

PERIOD OF RECORD.--October 1956 to current year. Monthly discharge only for some periods, published in WSP 1728.

GAGE.--Water-stage recorder. Datum of gage is 720.52 ft above mean sea level.

AVERAGE DISCHARGE.--16 years, 1,510 cfs (7.34 inches per year, 1,094,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,600 cfs June 18 (gage height, 17.49 ft); minimum daily, 146 cfs Oct. 3-7.

Period of record: Maximum discharge, 30,800 cfs Mar. 31, 1960 (gage height, 19.21 ft); maximum gage height, 19.79 ft July 12, 1969; minimum daily discharge, 54 cfs (estimated) Oct. 11, 12, 1956.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Eleven discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1558: 1957.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Dec. 2 to Feb. 27, Mar. 15; stage-discharge relation affected by ice Dec. 18, 19, Dec. 27 to Mar. 11).

Oct. 1 to June 7		June 8 to Sept. 30	
4.9	146	7.0	830
5.4	272	9.0	1,800
7.0	830	12.0	3,950
9.0	1,800	15.0	7,300
12.0	3,800	17.5	12,600
14.0	5,770		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	259	384	400	210	4,000	911	1,920	1,270	2,320	1,710	3,030
2	147	571	386	370	210	3,600	873	1,840	1,210	2,080	2,860	1,750
3	146	488	382	350	200	3,400	824	1,720	1,160	1,950	3,730	1,420
4	146	441	369	320	190	3,000	778	1,650	1,110	1,820	4,480	1,300
5	146	443	394	310	180	2,600	756	1,610	1,210	1,690	4,550	1,210
6	146	409	407	300	170	2,200	738	1,700	1,300	1,600	8,750	1,140
7	146	383	423	290	160	2,400	718	2,550	1,720	1,670	7,920	1,100
8	148	366	437	300	150	2,700	685	5,050	3,390	1,670	7,420	1,100
9	150	353	425	320	160	3,100	668	5,310	4,270	1,610	7,020	1,190
10	151	339	438	330	160	3,800	651	4,830	4,280	1,410	6,820	1,210
11	153	330	482	325	160	3,400	631	4,020	4,430	1,330	6,910	1,260
12	153	322	505	320	165	3,020	616	3,420	4,680	1,420	7,310	1,370
13	154	312	458	310	165	2,760	610	3,040	6,120	2,030	7,470	1,710
14	158	303	433	295	165	2,310	606	2,750	6,830	2,610	6,730	1,680
15	156	293	844	280	170	2,230	622	2,540	7,220	2,490	4,310	1,620
16	163	283	780	270	170	2,260	1,350	2,280	7,760	2,000	3,230	1,580
17	165	273	553	275	175	2,090	1,960	2,070	10,000	2,040	2,750	1,530
18	165	271	500	280	180	1,900	1,630	1,900	12,300	3,500	2,400	1,410
19	165	274	620	270	190	1,770	1,490	1,730	11,300	3,180	2,140	1,290
20	170	278	683	260	200	1,690	1,430	1,610	10,200	2,750	1,930	1,200
21	177	286	692	255	210	1,720	1,750	1,510	8,740	2,470	1,760	1,140
22	183	309	631	250	220	1,710	2,630	1,460	7,750	2,340	1,620	1,080
23	186	365	627	245	230	1,480	2,240	1,380	7,010	2,240	1,520	1,040
24	188	432	606	240	250	1,290	1,860	1,470	5,890	2,160	1,450	1,050
25	187	449	545	230	270	1,160	1,600	1,330	4,040	1,940	1,470	1,030
26	184	446	506	220	300	1,060	1,430	1,280	3,270	2,800	1,530	1,000
27	182	438	460	210	350	1,020	1,330	1,230	2,820	3,220	1,460	1,010
28	182	421	540	200	600	1,020	1,340	1,210	2,750	2,980	1,480	1,200
29	184	416	520	205	4,500	1,040	1,520	1,790	2,940	2,240	1,410	2,480
30	190	411	500	210	------	1,000	1,630	1,440	2,560	1,810	1,340	3,040
31	200	------	450	210	------	958	------	1,320	------	1,590	1,340	------
TOTAL	5,129	10,964	15,980	8,650	10,460	67,688	35,877	68,960	149,530	66,960	116,820	43,170
MEAN	165	365	515	279	361	2,183	1,196	2,225	4,984	2,160	3,768	1,439
MAX	200	571	844	400	4,500	4,000	2,630	5,310	12,300	3,500	8,750	3,040
MIN	146	259	369	200	150	958	606	1,210	1,110	1,330	1,340	1,000
CFSM	.06	.13	.18	.10	.13	.78	.43	.80	1.78	.77	1.35	.52
IN.	.07	.15	.21	.12	.14	.90	.48	.92	1.99	.89	1.56	.57
AC-FT	10,170	21,750	31,700	17,160	20,750	134,300	71,160	136,800	296,600	132,800	231,700	85,630

CAL YR 1971 TOTAL 530,668 MEAN 1,454 MAX 13,000 MIN 146 CFSM .52 IN 7.07 AC-FT 1,053,000
WTR YR 1972 TOTAL 600,188 MEAN 1,640 MAX 12,300 MIN 146 CFSM .59 IN 7.99 AC-FT 1,190.000

PEAK DISCHARGE (BASE, 6,000 CFS).--June 18 (0900) 12,600 cfs (17.49 ft); Aug. 6 (2000) 9,760 cfs (16.40 ft).

05453510 CORALVILLE LAKE NEAR CORALVILLE, IOWA

LOCATION.--Lat 41°43'29", long 91°31'40", in SW1/4 NE1/4 sec.22, T.80 N., R.6 W., Johnson County, at outlet works at left end of Coralville Dam on Iowa River, 2.3 miles upstream from Rapid Creek, 4.3 miles northeast of Coralville Post Office and at mile 83.3.

DRAINAGE AREA.--3,115 sq mi.

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 170,000 acre-ft Aug. 16 (elevation 695.53 ft); minimum, 7,860 acre-ft Apr. 28 (elevation 669.81 ft).

Period of record: Maximum contents, 472,000 acre-ft July 21, 1969 (elevation, 711.85 ft); minimum, 3,800 acre-ft Mar. 10, 1959 (elevation, 658.77 ft).

REMARKS.--Reservoir is formed by earthfill dam completed in 1957. Storage began in September 1958. Releases controlled by three gates, 8.33 ft wide and 20 ft high, into forechamber of 23 ft diameter concrete conduit through dam. Inlet invert elevation at 650 ft. No dead storage. Maximum design discharge through gates is 20,000 cfs. Ungated spillway is concrete overflow section 500 ft in length at elevation 712 ft above mean sea level, contents, 476,000 acre-ft. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Normal operation will maintain an elevation of 670 ft Feb. 15 to June 15, 680 ft June 15 to Sept. 25, 683 ft Sept. 25 to Dec. 15, and 680 ft December 15 to Feb. 1 with a minimum release of 150 cfs and maximum release of 10,000 cfs Dec. 15 to May 1 and 6,000 cfs May 1 to Dec. 15.

COOPERATION.--Records furnished by Corps of Engineers.

Capacity table (elevation, in feet and contents, in acre-feet)

665	4,360	685	67,800
670	7,900	690	108,000
675	18,600	695	162,000
680	38,700	700	232,000

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46,100	51,700	59,400	40,700	36,000	19,800	9,940	10,900	40,000	141,000	53,800	98,700
2	46,200	52,600	59,000	40,700	34,200	20,100	10,100	10,800	39,700	137,000	61,100	96,600
3	46,200	53,700	58,800	40,700	32,300	19,600	10,200	9,980	39,500	133,000	62,400	92,000
4	46,200	54,300	58,500	40,700	30,400	19,500	9,820	9,600	39,200	128,000	63,500	86,900
5	46,200	55,600	58,300	40,700	28,400	18,500	9,740	9,480	39,600	123,000	65,500	81,100
6	46,200	56,400	58,200	40,700	26,500	17,800	9,440	9,380	39,900	117,000	82,200	75,100
7	46,200	56,300	58,100	40,700	24,600	15,700	9,580	11,300	39,700	112,000	93,700	70,700
8	46,200	57,000	58,300	37,400	22,800	12,600	9,280	19,500	38,700	106,000	109,000	67,300
9	46,300	57,500	58,200	37,200	21,000	13,800	8,940	29,900	38,800	102,000	124,000	64,600
10	46,200	58,200	58,500	37,400	19,400	16,300	8,890	43,100	39,200	97,700	138,000	63,300
11	46,100	58,300	58,500	37,400	18,300	19,100	8,810	49,800	40,000	91,600	145,000	61,300
12	46,100	58,600	58,700	37,900	17,200	22,600	8,790	52,400	41,600	85,500	151,000	59,600
13	46,100	58,800	58,500	38,000	16,100	22,500	8,750	53,400	43,400	80,200	156,000	58,500
14	46,100	59,000	58,000	37,800	15,400	20,400	8,790	53,800	47,500	76,600	162,000	58,200
15	46,100	59,000	59,700	37,300	15,000	17,500	8,790	53,000	51,500	74,600	168,000	57,900
16	46,100	59,300	57,700	36,900	14,700	13,800	12,900	51,300	55,500	70,400	169,000	57,800
17	46,100	59,200	53,900	37,200	14,500	12,200	16,200	48,800	60,900	77,300	168,000	57,300
18	46,100	59,800	49,700	37,600	14,200	12,000	16,500	45,600	66,500	84,100	165,000	57,000
19	46,100	59,700	45,500	37,800	13,900	11,100	15,200	43,000	83,700	86,800	161,000	57,000
20	47,100	59,800	43,500	37,900	13,600	11,500	13,000	41,100	103,000	85,500	157,000	57,600
21	47,200	59,300	43,100	38,100	13,200	12,700	16,600	39,400	120,000	82,900	153,000	57,200
22	47,400	59,000	42,700	38,300	12,900	13,600	19,700	37,800	133,000	79,700	149,000	57,200
23	47,500	59,100	42,500	38,700	12,900	14,100	20,500	38,900	142,000	75,900	143,000	57,000
24	47,700	59,100	42,300	38,900	12,500	13,900	18,800	39,400	149,000	72,400	138,000	56,800
25	47,800	59,000	42,400	39,200	12,200	13,000	15,000	39,800	153,000	67,700	134,000	56,500
26	47,800	59,900	42,500	39,200	11,800	12,000	11,200	39,800	153,000	65,200	130,000	56,600
27	48,000	59,600	42,000	39,300	11,500	11,200	8,350	39,700	151,000	64,600	124,000	56,100
28	47,900	59,600	41,300	39,200	12,000	10,200	9,140	40,600	150,000	63,100	118,000	57,400
29	48,100	59,900	40,900	39,000	16,900	9,160	10,100	40,800	147,000	60,800	112,000	59,400
30	49,000	59,700	40,900	38,800	-------	9,140	10,700	40,700	145,000	57,100	106,000	62,300
31	49,000	-------	40,900	38,000	-------	9,620	-------	40,200	-------	52,600	102,000	-------
MAX	49,000	59,900	59,700	40,700	36,000	22,600	20,500	53,800	153,000	141,000	169,000	98,700
MIN	46,100	51,700	40,900	36,900	11,500	9,140	8,350	9,380	38,700	52,600	53,800	56,100
†	681.77	683.60	680.36	679.80	674.38	670.96	671.61	680.26	693.42	682.38	689.20	684.04
*	+3,000	+10,700	-18,800	-2,900	-21,100	-7,280	+1,080	+29,500	+104,800	-92,400	+49,400	-39,700

CAL YR 1971..............*+4,600
WTR YR 1972..............*+16,300

† Elevation, in feet, at end of month.
* Change in contents, in acre-feet.

05454000 RAPID CREEK NEAR IOWA CITY, IOWA

LOCATION.--Lat 41°41'15", long 91°29'15", in NE1/4 NE1/4 sec.36, T.80 N., R.6 W., Johnson County, on left bank 80 ft upstream from bridge on State Highway 1, 3.5 miles northeast of Iowa City, and 4.7 miles upstream from mouth.

DRAINAGE AREA.--25.3 sq mi.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control with sharp-crested weir. Datum of gage is 673.72 ft above mean sea level.

AVERAGE DISCHARGE.--35 years, 14.7 cfs (7.89 inches per year, 10,650 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,590 cfs July 17 (gage height, 14.93 ft); minimum daily, 0.10 cfs Oct. 1, 14-18.

Period of record: Maximum discharge, 6,100 cfs May 23, 1965 (gage height, 14.10 ft); from rating curve extended above 3,600 cfs on basis of contracted opening measurement of peak flow; maximum gage height, 14.93 ft July 17, 1972; no flow at times most years.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1558: 1941 (M), 1943 (P), 1944 (M); 1946. WSP 1708: 1951 (P), 1952, WRD IOWA 1967: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 13, 17-21, Dec. 25 to Jan. 18, Jan. 22-24, Jan. 26 to Feb. 21, Feb. 24, 25, Feb. 27 to Mar. 9).

Oct. 1 to Apr. 23				Apr. 24 to Sept. 30			
2.7	.10	3.8	16	3.3	3.9	6.0	240
2.8	.22	4.1	30	3.5	7.2	8.0	480
2.9	.44	4.5	56	3.8	16	10.0	870
3.0	.80	5.0	100	4.1	30	12.0	1,960
3.1	1.4	6.0	240	4.5	56		
3.3	3.9	8.0	480	5.0	100		
3.5	7.2	10.0	870				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	92	2.9	20	5.4	70	15	45	17	11	38	9.9
2	.11	121	3.1	16	5.0	14	16	45	15	11	162	9.2
3	.12	25	3.4	14	4.7	10	17	40	14	9.5	47	9.0
4	.12	16	3.6	12	4.6	8.0	16	36	13	8.9	36	8.5
5	.12	13	3.8	10	4.6	7.0	16	33	20	8.7	87	8.2
6	.12	9.7	4.8	11	4.5	11	16	34	17	8.6	528	7.8
7	.12	7.2	6.1	12	4.5	15	29	97	13	8.9	73	7.2
8	.11	6.8	6.1	15	4.4	7.6	19	167	46	8.0	76	13
9	.11	6.4	6.4	17	4.4	7.0	18	95	24	8.2	49	7.0
10	.11	5.6	12	12	4.5	6.7	17	71	18	7.3	40	7.8
11	.11	5.2	14	9.0	4.7	8.8	15	61	17	7.5	35	8.2
12	.11	4.9	12	8.0	5.0	49	14	56	16	8.6	32	9.8
13	.11	4.4	9.0	6.0	5.2	71	14	60	20	8.6	28	9.2
14	.10	4.4	10	6.4	5.2	163	44	78	35	17	24	7.4
15	.10	3.9	506	7.0	5.0	178	37	71	33	37	22	6.4
16	.10	3.3	93	8.0	4.5	48	321	57	22	10	20	6.2
17	.10	3.6	58	10	5.8	29	107	51	19	1,450	19	5.6
18	.10	3.9	45	9.0	25	22	63	45	18	256	17	5.8
19	.14	3.3	38	7.6	12	19	54	41	51	131	15	5.5
20	.90	2.9	35	7.6	7.0	19	49	38	44	74	14	5.6
21	.70	2.8	30	6.6	5.4	19	231	35	27	48	14	5.6
22	.60	2.3	27	7.0	4.7	17	118	32	22	39	13	5.4
23	.47	2.6	27	7.6	5.2	15	67	31	19	37	13	4.9
24	.60	2.7	25	7.0	5.4	13	56	31	17	32	12	4.6
25	.35	2.8	22	7.0	5.6	13	48	30	15	27	28	4.3
26	.17	3.3	20	6.8	4.9	12	41	27	15	56	17	4.2
27	.17	4.9	17	6.8	20	13	37	25	14	35	13	3.9
28	.16	3.9	20	6.6	300	11	36	24	16	29	11	7.6
29	.42	4.4	35	6.4	656	12	35	41	13	24	10	7.3
30	19	3.7	60	6.2	------	12	35	28	12	21	9.4	5.0
31	5.6	------	33	5.8	------	14	------	18	------	20	9.4	------
TOTAL	31.25	375.9	1,188.2	291.4	1,133.2	914.1	1,601	1,543	642	2,457.8	1,511.8	210.1
MEAN	1.01	12.5	38.3	9.40	39.1	29.5	53.4	49.8	21.4	79.3	48.8	7.00
MAX	19	121	506	20	656	178	321	167	51	1,450	528	13
MIN	.10	2.3	2.9	5.8	4.4	6.7	14	18	12	7.3	9.4	3.9
CFSM	.04	.49	1.51	.37	1.55	1.17	2.11	1.97	.85	3.13	1.93	.28
IN.	.05	.55	1.75	.43	1.67	1.34	2.35	2.27	.94	3.61	2.22	.31
AC-FT	62	746	2,360	578	2,250	1,810	3,180	3,060	1,270	4,880	3,000	417

CAL YR 1971 TOTAL 4,518.69 MEAN 12.4 MAX 530 MIN .07 CFSM .49 IN 6.64 AC-FT 8,960
WTR YR 1972 TOTAL 11,899.75 MEAN 32.5 MAX 1,450 MIN .10 CFSM 1.28 IN 17.50 AC-FT 23,600

PEAK DISCHARGE (BASE, 600 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
11-1	2220	9.56	750	2-29	--	--	*1,420
12-15	1000	10.43	1,010	7-17	1825	14.93	5,590
2-28	--	--	*2,150	8-6	0045	12.36	2,270

* About

05454300 CLEAR CREEK NEAR CORALVILLE, IOWA

LOCATION.--Lat 41°40'36", long 91°35'55", in NE1/4 SE1/4 sec.1, T.79 N., R.7 W., Johnson County, on left bank about 50 ft upstream from bridge on county highway, 1.1 miles west of Post Office in Coralville, 1.5 miles downstream from Deer Creek and 2.7 miles upstream from mouth.
DRAINAGE AREA.--98.1 sq mi.
PERIOD OF RECORD.--October 1952 to current year. Monthly discharge only for some periods, published in WSP 1728.
GAGE.--Water-stage recorder. Datum of gage is 648.43 ft above mean sea level (levels by Corps of Engineers). Prior to Jan. 7, 1957, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--20 years, 56.3 cfs (7.79 inches per year, 40,790 acre-ft per year); median of yearly mean discharges, 46 cfs (6.4 inches per year, 33,300 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 2,470 cfs Aug. 6 (gage height, 12.29 ft); minimum daily, 1.5 cfs Oct. 4.

Period of record: Maximum discharge, 5,390 cfs May 29, 1962; maximum gage height, 13.49 ft Mar. 3, 1970; minimum daily discharge, 0.1 cfs July 1, 1956.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended sediment analyses for the current year are published in Part 2 of this report.
COOPERATION.--Four discharge measurements furnished by Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	48	6.5	50	16	500	48	462	72	59	147	67
2	2.3	130	5.0	40	15	70	45	278	67	55	773	58
3	2.5	19	5.5	34	15	50	45	217	62	50	301	47
4	1.5	11	6.5	31	15	37	40	187	58	47	169	43
5	1.7	8.8	7.3	29	14	30	40	158	76	46	217	41
6	1.7	8.0	8.8	32	14	40	37	162	85	45	1,990	38
7	1.7	7.1	9.9	37	14	70	40	435	84	50	1,180	36
8	2.2	6.3	9.5	45	14	35	31	659	189	43	532	34
9	1.9	6.8	10	60	14	27	33	407	143	42	355	32
10	2.1	6.8	22	50	14	24	29	290	98	38	217	35
11	2.0	6.3	29	40	15	25	27	232	83	40	181	41
12	1.9	6.1	16	33	16	52	26	199	76	37	158	43
13	2.0	5.5	13	29	17	185	26	203	75	32	138	47
14	2.1	5.5	11	23	17	214	40	236	282	35	118	34
15	2.0	5.1	667	20	17	128	65	222	325	105	104	28
16	2.0	5.1	245	22	16	148	649	168	160	49	95	27
17	2.2	4.9	109	23	16	75	495	151	133	548	85	25
18	2.0	8.7	80	24	16	58	237	136	116	751	76	23
19	4.3	7.7	60	23	15	50	185	123	161	279	68	21
20	7.5	6.0	50	22	15	48	178	114	361	177	63	22
21	7.2	5.3	42	21	15	51	674	102	168	116	59	28
22	5.3	4.9	37	20	15	53	622	95	124	89	56	21
23	4.0	4.7	34	19	14	43	303	88	100	82	54	21
24	3.5	5.0	32	18	14	39	224	95	98	78	52	21
25	3.1	5.4	29	16	14	36	188	98	80	58	79	20
26	2.6	7.2	27	14	14	34	163	83	74	143	70	19
27	3.1	9.2	25	13	30	39	142	72	68	136	55	19
28	2.8	8.5	30	12	500	39	136	69	80	82	48	23
29	3.3	8.5	40	13	1,000	42	165	199	85	69	44	74
30	13	7.8	180	15	------	42	297	93	65	61	41	32
31	8.5	------	70	16	------	48	------	79	------	56	39	------
TOTAL	104.2	379.2	1,917.0	844	1,921	2,332	5,230	6,112	3,638	3,498	7,564	1,019
MEAN	3.36	12.6	61.8	27.2	66.2	75.2	174	197	121	113	244	34.0
MAX	13	130	667	60	1,000	500	674	659	361	751	1,990	74
MIN	1.5	4.7	5.0	12	14	24	26	69	58	32	39	18
CFSM	.03	.13	.63	.28	.67	.77	1.77	2.01	1.23	1.15	2.49	.35
IN.	.04	.14	.73	.32	.73	.88	1.98	2.32	1.38	1.33	2.87	.39
AC-FT	207	752	3,800	1,670	3,810	4,630	10,370	12,120	7,220	6,940	15,000	2,020

CAL YR 1971 TOTAL 13,636.3 MEAN 37.4 MAX 1,200 MIN 1.5 CFSM .38 IN 5.17 AC-FT 27,050
WTR YR 1972 TOTAL 34,558.4 MEAN 94.4 MAX 1,990 MIN 1.5 CFSM .96 IN 13.10 AC-FT 68,550

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	1130	9.39	1,170	4-21	2030	8.85	1,020
2-29	--	--	* 1,200	7-17	1815	10.87	1,670
4-16	1645	9.00	1,070	8-6	0900	12.29	2,470

* About

05454500 IOWA RIVER AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'24", long 91°32'27", in SE1/4 SE1/4 sec.9, T.79 N., R.6 W., Johnson County, on right bank 25 ft downstream from Hydraulics Laboratory of University of Iowa in Iowa City, 175 ft downstream from University Dam, 0.8 mile upstream from Ralston Creek, 3.6 miles downstream from Clear Creek, and at mile 74.2.

DRAINAGE AREA.--3,271 sq mi.

PERIOD OF RECORD.--June 1903 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 39.00 ft above Iowa City datum, and 627.27 ft above mean sea level. See WSP 1708 for history of changes prior to Oct. 1, 1934.

AVERAGE DISCHARGE.--69 years, 1,566 cfs (6.50 inches per year, 1,135,000 acre-ft per year); median of yearly mean discharges, 1,390 cfs (5.8 inches per year, 1,010,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 10,600 cfs July 17 (gage height, 11.54 ft); minimum daily, 148 cfs Oct. 13.

Period of record: Maximum discharge, 42,500 cfs June 8, 1918 (gage height, 19.6 ft, from graph based on gage readings, site and datum then in use); minimum daily, 29 cfs Oct. 21, 22, 1916 (regulated).

Flood of July 17, 1881, reached a stage of 21.1 ft, from floodmarks at site and datum in use 1913-21, from information by local resident (discharge, 51,000 cfs). Maximum stage known since at least 1850, about 3 ft higher than that of July 17, 1881, occurred in June 1851 (discharge 70,000 cfs, estimated).

REMARKS.--Records excellent. Diurnal fluctuation at low stages caused by powerplant above station. Flow regulated by Coralville Lake since Sept. 17, 1958 (see sta. 05453510). Records of chemical analyses, water temperature, and suspended-sediment loads for the current year are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used May 21-29, Sept. 28-30; stage-discharge relation affected by ice Jan. 4-6).

-.90	130	3.00	2,400
-.40	270	7.00	5,800
+.20	490	12.0	11,200
1.00	910		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	330	517	638	1,290	3,050	1,200	2,910	1,580	4,160	3,950	4,060
2	155	675	517	604	1,180	3,080	1,200	3,200	1,570	4,130	4,150	4,030
3	162	233	518	581	1,150	3,830	1,210	3,070	1,490	4,100	3,550	3,980
4	155	190	522	580	1,140	3,790	1,320	2,700	1,370	4,070	3,990	3,940
5	155	179	521	540	1,130	3,830	1,170	2,420	1,390	4,120	4,480	3,910
6	155	169	527	560	1,100	3,770	1,100	2,450	1,390	4,190	5,670	3,870
7	150	162	530	560	1,090	3,800	1,130	2,950	1,490	4,160	2,700	3,530
8	152	162	528	565	1,070	3,680	1,100	2,820	3,100	4,120	1,820	2,850
9	152	165	542	623	1,050	2,720	1,090	1,780	3,970	4,180	1,570	2,460
10	150	170	596	526	936	2,170	987	1,980	4,000	4,250	2,050	2,460
11	150	205	607	440	684	2,930	890	3,010	3,990	4,240	3,710	2,450
12	150	235	576	442	673	3,380	889	4,010	4,000	4,180	4,160	2,460
13	148	235	557	425	664	4,540	884	4,130	4,100	4,120	4,160	2,460
14	150	269	864	421	522	5,100	985	4,220	4,350	4,110	4,160	2,160
15	150	305	3,730	440	292	5,160	979	4,140	4,500	4,240	4,160	1,870
16	150	305	3,100	388	216	5,020	2,800	4,040	4,270	4,050	4,170	1,880
17	150	298	2,780	289	226	3,770	2,590	3,980	4,270	6,000	4,150	1,880
18	150	326	2,680	266	230	2,780	2,870	3,930	4,290	4,120	4,130	1,730
19	172	336	2,640	261	266	2,820	3,040	3,510	4,670	2,810	4,100	1,480
20	172	340	1,770	260	215	2,220	3,240	2,910	4,730	4,490	4,080	1,380
21	165	336	697	259	217	1,650	3,820	2,890	4,510	4,300	4,050	1,380
22	158	336	682	260	209	1,660	3,230	2,430	4,440	4,220	4,020	1,300
23	155	340	683	261	231	1,780	3,550	1,640	4,330	4,190	4,000	1,220
24	152	392	677	259	257	1,870	3,840	1,670	4,220	4,140	4,030	1,230
25	152	440	673	257	263	1,990	4,190	1,630	4,230	4,130	4,310	1,230
26	150	449	673	250	261	1,970	4,000	1,610	4,240	4,400	4,150	1,230
27	153	459	662	283	277	1,940	3,530	1,600	4,220	4,320	4,060	1,220
28	150	473	637	316	818	1,910	1,960	1,600	4,260	4,200	4,010	1,180
29	163	491	628	318	2,590	1,900	1,650	2,070	4,220	4,150	4,010	1,160
30	230	524	811	317	------	1,510	2,240	2,070	4,190	4,110	4,090	1,500
31	171	------	654	530	------	1,200	------	1,920	------	4,050	4,060	------
TOTAL	4,882	9,529	32,099	12,719	20,247	90,820	62,684	85,290	107,180	130,050	119,700	67,490
MEAN	157	318	1,035	410	698	2,930	2,089	2,751	3,573	4,195	3,861	2,250
MAX	230	675	3,730	638	2,590	5,160	4,190	4,220	4,730	6,000	5,670	4,060
MIN	148	162	517	250	209	1,200	884	1,600	1,370	2,810	1,570	1,160
AC-FT	9,680	18,900	63,670	25,230	40,160	180,100	124,300	169,200	212,600	258,000	237,400	133,900

CAL YR 1971 TOTAL 627,070 MEAN 1,718 MAX 10,200 MIN 148 AC-FT 1,244,000
WTR YR 1972 TOTAL 742,690 MEAN 2,029 MAX 6,000 MIN 148 AC-FT 1,473,000

05455000 RALSTON CREEK AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'50", long 91°30'48", in SE1/4 NW1/4 sec.11, T.79 N., R.6 W., Johnson County, on left bank 10 ft upstream from bridge on Rochester Avenue, 1.0 mile northeast of Post Office in Iowa City and 2.2 miles upstream from mouth.
DRAINAGE AREA.--3.01 sq mi.
PERIOD OF RECORD.--September 1924 to current year.
GAGE.--Water -stage recorder and V-notch sharp-crested weir. Datum of gage is 663.27 ft (revised) above mean sea level (University of Iowa bench mark).
AVERAGE DISCHARGE.--48 years, 1.61 cfs (7.26 inches per year, 1,170 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,760 cfs July 17 (gage height, 9.01 ft); minimum daily, 0.05 cfs Oct. 1, 6, 7, 11-13, 15, 16, 18.

Period of record: Maximum discharge, 1,940 cfs Sept. 21, 1965 (gage height, 6.90 ft); maximum gage height, 9.06 ft July 18, 1956; no flow at times during most years.
REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1508: 1933, 1935-37, 1940-41 (M); 1942, 1943 (M), 1948-51, 1952 (P), 1953, 1954 (M), 1955. WRD Iowa. 1967: 1965-66.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	17	.34	1.8	.30	3.0	3.0	6.0	1.2	.82	6.0	1.4
2	.07	7.5	.37	1.5	.31	1.4	2.7	4.7	1.1	.85	14	1.4
3	.12	1.9	.38	1.1	.26	1.0	2.3	4.0	.99	.73	5.1	1.3
4	.08	1.2	.39	.90	.20	.80	2.1	3.6	.88	.70	4.0	1.1
5	.06	1.0	.42	.80	.14	.70	1.8	3.8	2.4	.67	18	1.1
6	.05	.70	.69	.84	.11	.90	1.3	4.0	2.2	.62	65	1.0
7	.05	.56	.70	.90	.10	1.6	1.2	12	1.6	.99	8.5	1.6
8	.07	.55	.60	1.4	.10	.70	.94	13	8.4	1.7	13	1.5
9	.07	.58	.65	1.8	.10	.80	1.1	7.1	2.5	1.6	6.1	1.0
10	.06	.47	2.2	1.2	.12	1.2	.95	5.5	1.6	.92	4.5	1.7
11	.05	.45	1.5	1.0	.17	1.9	.92	4.8	1.3	1.1	4.0	1.4
12	.05	.47	1.1	.90	.30	5.7	.96	4.3	1.3	.90	3.5	2.3
13	.05	.41	.84	.60	.35	5.5	1.0	6.1	1.6	1.0	3.1	1.7
14	.06	.39	1.3	.45	.40	15	8.6	6.0	3.0	2.6	2.4	1.4
15	.05	.35	54	.30	.35	14	4.8	5.0	2.4	4.3	2.2	1.2
16	.05	.32	6.1	.40	.30	3.7	43	4.3	1.4	2.6	2.0	1.2
17	.06	.32	3.5	.47	.80	2.8	8.6	3.8	1.2	146	1.8	1.3
18	.05	.40	2.6	.44	2.0	2.2	5.9	3.5	1.1	9.2	1.7	1.2
19	.31	.30	2.3	.24	1.3	2.3	5.3	3.3	6.9	12	1.6	1.2
20	.82	.31	2.0	.16	.70	2.6	4.7	3.0	3.9	6.0	1.5	1.3
21	.25	.27	1.8	.16	.60	2.5	23	2.9	2.3	3.9	1.6	1.3
22	.16	.24	1.6	.20	.50	2.2	9.9	2.7	1.6	2.9	1.4	1.2
23	.15	.28	1.8	.25	.60	1.8	6.6	2.9	1.4	3.2	1.3	1.1
24	.14	.31	1.6	.30	.70	1.8	5.1	1.8	1.2	2.4	1.4	.99
25	.13	.34	1.5	.35	.80	1.7	4.4	1.1	1.1	1.9	12	.82
26	.13	.57	1.4	.40	.60	1.6	4.0	1.1	.99	7.2	2.7	.56
27	.14	.58	1.2	.48	30	1.7	3.7	.99	.99	3.1	1.8	.51
28	.14	.44	1.0	.40	80	1.6	3.8	1.4	1.3	2.4	1.5	1.2
29	.65	.52	1.8	.30	20	1.9	4.1	6.4	1.1	1.9	1.4	1.2
30	5.4	.42	9.2	.25	------	2.1	4.0	1.8	.98	1.8	1.3	.70
31	.64	------	2.4	.28	------	2.9	------	1.4	------	2.3	1.3	------
TOTAL	10.16	39.15	107.28	20.57	142.21	89.60	169.77	132.29	59.93	228.30	195.7	36.88
MEAN	.33	1.31	3.46	.66	4.90	2.89	5.66	4.27	2.00	7.36	6.31	1.23
MAX	5.4	17	54	1.8	80	15	43	13	8.4	146	65	2.3
MIN	.05	.24	.34	.16	.10	.70	.92	.99	.88	.62	1.3	.51
CFSM	.11	.44	1.15	.22	1.63	.96	1.88	1.42	.66	2.45	2.10	.41
IN.	.13	.48	1.33	.25	1.76	1.11	2.10	1.63	.74	2.82	2.42	.46
AC-FT	20	78	213	41	282	178	337	262	119	453	388	73

CAL YR 1971 TOTAL 595.09 MEAN 1.63 MAX 80 MIN 0 CFSM .54 IN 7.35 AC-FT 1,180
WTR YR 1972 TOTAL 1,231.84 MEAN 3.37 MAX 146 MIN .05 CFSM 1.12 IN 15.22 AC-FT 2,440

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-28	--	--	* 322	8-6	0030	6.53	618
7-17	1710	9.01	1,760				

* About

05455010 SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'05", long 92°30'27", in SW1/4 NE1/4 sec.14, T.79 N., R.6 W., Johnson County, on right bank 60 ft downstream from bridge on Muscatine Avenue in Iowa City, and 1.2 miles upstream from mouth.
DRAINAGE AREA.--2.94 sq mi.
PERIOD OF RECORD.--October 1963 to current year.
GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 678.03 ft above mean sea level.
AVERAGE DISCHARGE.--9 years, 2.24 cfs (10.35 inches per year, 1,620 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,070 cfs July 17 (gage height, 9.47 ft); minimum daily, 0.01 cfs Oct. 15, 17, 18.

Period of record: Maximum discharge, 1,070 cfs July 17, 1972 (gage height, 9.47 ft); no flow at times most years.

Flood of July 14, 1962 reached a stage of 10.5 ft, from flood profile (discharge not determined).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.
REVISIONS.--WRD Iowa 1966: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Nov. 1, Dec. 15; stage-discharge relation affected by ice Dec. 27, Dec. 31 to Jan. 10, Jan. 12 to Mar. 7).

Oct. 1 to Apr. 16

1.1	.01	1.4	.24	1.9	6.7
1.13	.02	1.5	.42	2.1	14
1.17	.03	1.6	.71	2.5	31
1.23	.07	1.7	1.4	3.2	74
1.3	.13				

Apr. 17 to Sept. 30

Note.--Same as preceeding table below 3.2 ft.

3.2	74
4.1	138

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	28	.43	1.3	.30	2.5	2.7	8.4	1.3	.78	19	1.3
2	.71	14	.39	1.1	.20	1.5	2.5	4.5	1.2	1.0	16	1.2
3	.43	3.1	.37	1.0	.13	.70	3.4	3.0	1.1	.62	8.8	.90
4	.11	1.9	.37	.95	.10	.60	2.2	2.5	.80	.62	7.5	.99
5	.09	1.5	.38	.90	.09	.60	2.0	2.9	12	.61	55	.70
6	.13	1.2	.43	.95	.08	.70	3.0	3.1	3.6	1.3	55	.67
7	.33	.96	.45	1.0	.08	.70	3.1	18	1.4	.68	9.8	.71
8	.40	.90	.45	1.1	.08	.68	1.9	16	18	.58	16	3.0
9	.06	.84	.45	1.5	.08	.71	1.3	7.6	3.6	.76	7.8	.70
10	.03	.86	.60	1.3	.09	.71	1.2	5.1	2.4	.57	5.5	2.6
11	.02	.82	1.1	1.1	.12	.71	1.2	3.7	2.2	2.3	3.1	.90
12	.02	.80	1.8	.70	.80	9.6	1.4	3.0	2.0	.69	2.5	3.6
13	.02	.78	1.4	.40	1.5	9.3	1.3	7.5	2.5	.55	2.1	2.8
14	.02	.75	2.6	.30	3.0	18	11	8.2	8.0	2.0	1.8	1.2
15	.01	.58	71	.20	1.0	21	4.3	5.0	4.2	1.0	1.7	.85
16	.02	.55	8.5	.25	.90	7.4	61	3.3	1.8	.48	1.6	.76
17	.01	.53	5.4	.35	2.5	4.8	9.7	2.8	1.3	132	1.2	.70
18	.01	.62	4.0	.30	4.0	4.1	6.0	2.1	1.1	5.8	1.1	.69
19	2.1	.54	3.5	.20	2.5	3.2	5.8	1.8	21	16	1.2	.68
20	3.0	.48	2.7	.16	1.5	3.2	4.4	1.4	5.1	6.2	1.2	.79
21	.22	.42	2.1	.13	1.0	3.2	34	1.3	2.9	3.5	1.1	.56
22	.15	.37	1.8	.17	.60	2.8	10	1.2	2.0	2.4	.99	.56
23	.12	.32	1.9	.23	7.0	2.1	6.3	1.2	1.4	5.3	1.0	.68
24	.11	.32	1.7	.30	9.0	1.5	4.4	1.1	1.2	2.3	.90	.98
25	.09	.32	1.8	.35	5.0	1.5	3.4	1.0	1.1	2.9	15	.98
26	.10	.35	1.7	.42	1.0	1.6	3.3	.94	.99	17	2.3	.81
27	.18	.47	1.6	.50	20	1.9	2.3	.87	.93	7.2	1.3	.49
28	.06	.45	1.3	.40	45	1.6	2.7	4.9	2.3	6.0	1.1	1.9
29	4.6	.47	2.8	.30	10	4.3	3.3	17	.92	5.5	.99	.55
30	9.5	.48	7.1	.23	------	2.4	3.4	2.3	.79	5.0	.88	.51
31	.92	------	1.6	.27	------	3.0	------	1.5	------	4.5	.85	------
TOTAL	23.62	63.68	131.72	18.36	117.65	116.61	202.5	143.21	109.13	236.14	244.31	33.76
MEAN	.76	2.12	4.25	.59	4.06	3.76	6.75	4.62	3.64	7.62	7.88	1.13
MAX	9.5	28	71	1.5	45	21	61	18	21	132	55	3.6
MIN	.01	.32	.37	.13	.08	.60	1.2	.87	.79	.48	.85	.49
CFSM	.26	.72	1.45	.20	1.38	1.28	2.30	1.57	1.24	2.59	2.68	.38
IN.	.30	.81	1.67	.23	1.49	1.48	2.56	1.81	1.38	2.99	3.09	.43
AC-FT	47	126	261	36	233	231	402	284	216	468	485	67

CAL YR 1971 TOTAL 698.53 MEAN 1.91 MAX 71 MIN 0 CFSM .65 IN 8.84 AC-FT 1,390
WTR YR 1972 TOTAL 1,440.69 MEAN 3.94 MAX 132 MIN .01 CFSM 1.34 IN 18.23 AC-FT 2,860

PEAK DISCHARGE (BASE, 200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	0845	5.43	224	7-17	1720	9.47	1,070
5-29	0015	5.30	236	8-6	0020	7.71	578

05455500 ENGLISH RIVER AT KALONA, IOWA

LOCATION.--Lat 41°27'59", long 91°42'56", in SW1/4 SE1/4 sec.13, T.77 N., R.8 W., Washington County, on right bank 30 ft upstream from bridge on State Highway 1, 0.8 mile south of Kalona, 1.1 miles upstream from Camp Creek, 4.5 miles downstream from Smith Creek, and 14.5 miles upstream from mouth.
DRAINAGE AREA.--573 sq mi.
PERIOD OF RECORD.--September 1939 to current year.
GAGE.--Water-stage recorder. Datum of gage is 633.45 ft above mean sea level (levels by Corps of Engineers). Prior to Dec. 27, 1939, nonrecording gage 30 ft downstream at same datum.
AVERAGE DISCHARGE.--33 years, 341 cfs (8.08 inches per year, 247,100 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 6,790 cfs Aug. 8 (gage height, 15.81 ft); minimum daily, 12 cfs Oct. 14.

Period of record: Maximum discharge, 20,000 cfs Sept. 21, 1965 (gage height, 21.45 ft); minimum daily, 1.1 cfs Jan. 20-27, 1956.

Flood in June 1930 reached a stage of 19.9 ft from floodmark, from information by local residents (discharge, 18,500 cfs).
REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Five discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1940 (M), 1941, WSP 1708: 1956, 1957 (P), 1958 (P).

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Apr. 27-28, July 27-28, Sept. 20-28; stage-discharge relation affected by ice Dec. 18 to Mar. 10).

Oct. 1 to Mar. 1				Mar. 2 to Sept. 30			
2.2	11	5.0	565	2.8	102	8.0	1,620
2.3	21	8.0	1,480	3.5	247	11.0	2,950
2.7	73	11.0	2,850	5.0	640	14.0	4,950
3.5	217	13.0	4,100				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	112	60	300	62	4,000	319	2,950	306	216	232	149
2	16	1,190	52	240	64	1,200	296	2,310	272	194	1,620	653
3	15	550	53	200	66	350	542	1,140	247	176	1,180	369
4	14	178	52	190	66	230	287	1,010	223	161	553	240
5	17	103	55	180	66	220	275	851	216	150	416	199
6	15	78	62	170	66	240	265	874	326	144	5,000	176
7	14	63	84	170	68	250	258	2,110	260	150	5,980	159
8	13	52	95	160	68	180	225	4,320	269	172	6,480	147
9	13	51	94	210	68	150	207	4,720	1,010	148	3,290	136
10	13	51	136	250	68	155	207	3,460	546	134	1,240	223
11	13	50	311	210	70	161	199	1,680	367	126	913	2,090
12	14	48	244	160	72	197	192	1,200	306	121	733	1,350
13	13	45	156	120	74	790	195	1,090	984	130	636	1,480
14	12	42	119	90	76	906	199	1,240	1,850	121	733	1,380
15	13	40	3,610	70	78	593	216	1,030	2,360	115	500	1,070
16	13	37	3,980	65	80	895	1,340	991	1,470	135	420	579
17	13	37	1,220	60	100	649	3,100	756	843	364	367	423
18	13	40	500	65	210	458	1,560	661	649	2,060	319	329
19	19	50	380	70	250	374	925	583	599	619	280	262
20	21	48	320	70	190	344	985	527	1,280	734	248	223
21	32	43	280	68	150	336	3,290	484	841	408	224	254
22	30	38	240	66	130	346	5,220	442	526	243	205	255
23	35	32	220	64	120	317	3,540	402	429	190	191	200
24	25	33	200	62	130	270	1,780	425	369	269	184	195
25	19	35	190	60	150	252	1,020	474	329	246	212	178
26	16	40	180	58	200	234	772	371	297	289	324	163
27	13	58	170	56	400	229	706	322	268	1,200	332	147
28	13	66	160	54	1,700	254	645	299	265	566	218	138
29	13	68	150	56	2,700	277	1,060	312	304	332	182	151
30	47	65	450	58	------	294	1,630	568	259	258	161	179
31	52	------	370	60	------	312	------	401	------	212	147	------
TOTAL	586	3,343	14,193	3,712	7,542	15,463	31,455	37,903	18,269	10,383	33,520	13,487
MEAN	18.9	111	458	120	260	499	1,049	1,223	609	335	1,081	450
MAX	52	1,190	3,980	300	2,700	4,000	5,220	4,720	2,360	2,060	6,480	2,090
MIN	12	32	52	54	62	150	192	299	216	115	147	136
CFSM	.03	.19	.80	.21	.45	.87	1.83	2.13	1.06	.58	1.89	.79
IN.	.04	.22	.92	.24	.49	1.00	2.04	2.46	1.19	.67	2.18	.88
AC-FT	1,160	6,630	28,150	7,360	14,960	30,670	62,390	75,180	36,240	20,590	66,490	26,750

CAL YR 1971 TOTAL 92,950 MEAN 255 MAX 5,000 MIN 12 CFSM .45 IN 6.03 AC-FT 184,400
WTR YR 1972 TOTAL 189,856 MEAN 519 MAX 6,480 MIN 12 CFSM .91 IN 12.33 AC-FT 376,600

PEAK DISCHARGE (BASE, 4,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-15	2200	14.23	5,160	5-9	1730	13.94	4,900
3-1	--	--	* 4,100	8-8	0815	15.81	6,790
4-22	0500	14.55	5,450				

* About

05455700 IOWA RIVER NEAR LONE TREE, IOWA

LOCATION.--Lat 41°25'15", long 91°28'25", in NW1/4 NE1/4 sec.6, T.76 N., R.5 W., Louisa County, on left bank 10 ft downstream from bridge on county highway W66, 5 miles southwest of Lone Tree, 6.2 miles downstream from English River, and at mile 47.2.

DRAINAGE AREA.--4,293 sq mi.

PERIOD OF RECORD.--October 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 588.16 ft above mean sea level. Prior to Dec. 28, 1956, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--16 years, 2,481 cfs (7.85 inches per year, 1,797,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 14,000 cfs Aug. 7 (gage height, 14.79 ft); minimum daily, 200 cfs Oct. 18.

Period of record: Maximum discharge, 31,200 cfs Sept. 22, 1965 (gage height, 20.27 ft); minimum daily, 75 cfs Dec. 8, 1956.

Flood of May 25, 1944, reached a stage of 19.94 ft (discharge not determined), from information by Corps of Engineers.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Coralville Reservoir beginning Sept. 17, 1958 (see Sta. 05453510).

COOPERATION.--Seven discharge measurements furnished by Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	287	653	1,300	900	8,740	1,990	6,060	2,490	4,650	4,500	4,400
2	217	2,730	652	1,100	1,800	7,110	1,980	7,420	2,300	4,580	5,700	4,670
3	230	1,920	641	1,000	1,700	4,420	1,950	5,690	2,250	4,500	6,420	4,740
4	224	769	645	950	1,600	4,230	1,950	4,780	2,080	4,440	5,150	4,470
5	216	501	654	900	1,500	3,920	1,990	3,970	2,070	4,390	4,850	4,360
6	213	419	659	840	1,400	4,060	1,840	3,930	3,550	4,470	11,000	4,270
7	213	380	687	820	1,300	4,030	1,830	5,390	2,480	4,490	13,500	4,200
8	212	355	718	860	1,200	4,080	1,720	9,410	3,090	4,480	12,100	3,660
9	212	343	728	1,000	1,300	3,580	1,640	8,930	5,090	4,450	11,600	3,060
10	212	308	858	900	1,300	2,400	1,620	7,920	5,040	4,520	6,560	3,170
11	208	348	1,170	750	1,200	2,860	1,470	6,190	4,710	4,490	4,960	4,420
12	207	366	1,190	660	1,000	3,240	1,380	5,850	4,590	4,540	5,470	4,540
13	208	377	986	640	980	5,140	1,370	5,930	4,920	4,430	5,310	4,300
14	205	368	890	630	960	7,500	1,370	6,250	6,390	4,380	5,300	4,130
15	205	394	8,280	660	700	6,640	1,530	6,280	7,680	4,450	5,110	3,580
16	204	407	11,600	630	450	7,020	3,410	5,640	6,870	4,390	4,960	3,020
17	203	407	8,180	580	400	6,020	5,130	5,350	5,670	4,450	4,880	2,760
18	200	415	4,470	500	410	3,890	5,490	5,070	5,310	9,190	4,790	2,620
19	221	437	3,300	430	480	3,540	4,810	4,870	5,220	5,420	4,720	2,330
20	256	459	3,000	400	540	3,390	4,680	4,030	6,760	5,690	4,650	2,070
21	257	455	2,200	390	480	2,620	7,580	3,760	6,280	5,340	4,590	2,020
22	233	443	1,300	380	450	2,470	11,400	3,630	5,470	4,900	4,520	2,020
23	229	447	1,250	380	420	2,420	11,100	2,820	5,150	4,720	4,470	1,850
24	226	449	1,200	380	430	2,450	7,740	2,610	4,940	4,660	4,420	1,770
25	218	499	1,160	370	480	2,540	6,220	2,710	4,850	4,630	5,030	1,760
26	212	540	1,150	390	490	2,510	5,710	2,540	4,800	4,790	5,050	1,730
27	208	579	1,120	430	560	2,490	5,290	2,440	4,750	5,530	4,750	1,680
28	206	603	1,100	450	3,000	2,440	4,190	2,380	4,770	5,330	4,580	1,660
29	204	639	1,100	470	5,600	2,510	2,940	2,850	4,800	4,790	4,450	1,600
30	323	654	1,500	480	------	2,490	4,440	3,000	4,790	4,630	4,460	1,620
31	343	------	1,800	480	------	2,090	------	2,890	------	4,510	4,420	------
TOTAL	6,943	17,298	64,841	20,150	33,030	122,840	115,760	150,590	139,160	150,230	182,270	92,480
MEAN	224	577	2,092	650	1,139	3,963	3,859	4,858	4,639	4,846	5,880	3,083
MAX	343	2,730	11,600	1,300	5,600	8,740	11,400	9,410	7,680	9,190	13,500	4,740
MIN	200	287	641	370	400	2,090	1,370	2,380	2,070	4,380	4,420	1,600
AC-FT	13,770	34,310	128,600	39,970	65,520	243,700	229,600	298,700	276,000	298,000	361,500	183,400

CAL YR 1971 TOTAL 824,852 MEAN 2,260 MAX 14,700 MIN 200 AC-FT 1,636,000
WTR YR 1972 TOTAL 1,095,592 MEAN 2,993 MAX 13,500 MIN 200 AC-FT 2,173,000

05457700 CEDAR RIVER AT CHARLES CITY, IOWA

LOCATION.--Lat 43°03'45", long 92°40'23", in SE1/4 NE1/4, sec.12, T.95 N., R.16 W., Floyd County, on right bank 800 ft downstream from bridge on U.S. Highway 18 (Brantingham Street) in Charles City, 10.6 miles upstream from Gizzard Creek, and at mile 252.9 upstream from mouth of Iowa River.

DRAINAGE AREA.--1,054 sq mi.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 973.02 ft above mean sea level.

AVERAGE DISCHARGE.--8 years, 618 cfs (7.96 inches per year, 447,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,750 cfs Sept. 29 (gage height, 8.99 ft); minimum daily, 180 cfs Feb. 2.

Period of record: Maximum discharge, 21,000 cfs Apr. 7, 1965 (gage height, 19.14 ft); maximum gage height, 21.64 ft Mar. 2, 1965 (backwater from ice); minimum daily discharge, 86 cfs Dec. 1, 1966.

Flood of Mar. 27, 1961, reached a stage of 21.6 ft, from floodmarks (discharge, 29,200 cfs).

REMARKS.--Records good except those for winter period, which are poor. Occasional minor regulation by dam 0.2 mile above gage. Daily wire-weight gage readings available in district office for period Sept. 13, 1945, to June 30, 1954, at same site and datum. Discharge not published for this period because of extreme regulation of streamflow by power dam 0.2 mile upstream. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 12 to Jan. 6, Jan. 12-18, Jan. 24 to Mar. 19).

2.14	180
2.5	395
3.0	760
5.0	2,160
9.0	5,740

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	562	284	240	182	208	369	680	844	474	488	229
2	207	499	322	250	180	214	359	1,160	636	440	449	227
3	239	458	372	300	184	216	347	1,630	523	362	425	222
4	245	406	374	405	190	218	339	1,460	445	307	405	215
5	221	363	349	360	196	220	336	1,120	418	273	367	211
6	203	333	336	326	204	220	330	968	383	254	354	205
7	195	297	333	285	210	224	341	848	364	317	334	221
8	193	265	340	251	214	230	344	746	355	425	341	222
9	197	276	347	233	220	240	333	663	347	562	325	225
10	193	280	357	225	222	260	334	598	343	1,020	316	229
11	188	270	362	223	222	330	352	547	334	1,060	306	361
12	189	264	290	233	220	480	380	511	309	1,370	298	402
13	189	262	196	250	220	780	394	499	293	960	284	406
14	190	259	250	280	218	2,000	401	491	299	760	272	760
15	188	254	320	300	212	2,400	395	476	288	699	262	783
16	189	334	350	330	206	2,250	427	464	270	743	258	607
17	188	388	260	330	202	1,900	421	457	262	780	253	481
18	190	599	200	320	198	1,520	399	438	252	963	244	401
19	203	826	220	290	196	1,320	389	457	247	1,100	235	351
20	200	722	286	267	194	1,140	382	447	251	939	226	337
21	202	586	280	267	192	1,040	403	390	250	714	222	349
22	202	478	270	268	190	962	503	353	259	608	219	527
23	200	418	262	273	190	846	821	329	263	615	226	483
24	199	401	250	273	188	669	842	324	251	537	229	482
25	194	384	250	320	190	566	722	317	239	448	250	1,470
26	191	381	250	296	190	509	611	321	232	422	264	1,620
27	228	386	230	258	192	479	541	338	233	502	289	2,260
28	254	402	212	230	194	439	500	443	269	628	274	2,880
29	322	404	190	208	200	408	484	682	335	701	254	5,210
30	356	391	204	194	------	393	517	1,280	423	607	239	4,140
31	488	------	252	184	------	378	------	1,110	------	506	235	------
TOTAL	6,842	12,148	8,798	8,469	5,816	23,059	13,316	20,547	10,217	20,096	9,143	26,516
MEAN	221	405	284	273	201	744	444	663	341	648	295	884
MAX	488	826	374	405	222	2,400	842	1,630	844	1,370	488	5,210
MIN	188	254	190	184	180	208	330	317	232	254	219	205
CFSM	.21	.38	.27	.26	.19	.71	.42	.63	.32	.61	.28	.84
IN.	.24	.43	.31	.30	.21	.81	.47	.73	.36	.71	.32	.94
AC-FT	13,570	24,100	17,450	16,800	11,540	45,740	26,410	40,750	20,270	39,860	18,140	52,590

CAL YR 1971 TOTAL 236,028 MEAN 647 MAX 8,510 MIN 150 CFSM .61 IN 8.33 AC-FT 468,200
WTR YR 1972 TOTAL 164,967 MEAN 451 MAX 5,210 MIN 180 CFSM .43 IN 5.82 AC-FT 327,200

PEAK DISCHARGE (BASE, 2,500 CFS).--Mar. 15 (0900) about 2,600 cfs (6.46 ft); Sept. 29 (0800) 5,750 cfs (8.99 ft).

05458000 LITTLE CEDAR RIVER NEAR IONIA, IOWA

LOCATION.--Lat 43°02'05", long 92°30'05", in SW1/4 NE1/4 sec.21, T.95 N., R.14 W., Chickasaw County, on left bank 12 ft downstream from bridge on county highway B57, 2.4 miles west of Ionia, 6.4 miles upstream from mouth, and 7.6 miles downstream from Beaver Creek.
DRAINAGE AREA.--306 sq mi.
PERIOD OF RECORD.--October 1954 to current year.
GAGE.--Water-stage recorder. Datum of gage is 973.35 ft above mean sea level.
AVERAGE DISCHARGE.--18 years, 139 cfs (6.17 inches per year, 100,700 acre-ft per year); median of yearly mean discharges, 120 cfs (5.3 inches per year, 86,900 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 5,260 cfs Sept. 30 (gage height, 11.99 ft); minimum daily, 21 cfs Jan. 16, 17, 27-31, Feb. 1-3, 16-19.

Period of record: Maximum discharge, 10,800 cfs Mar. 27, 1961 (gage height, 15.58 ft); minimum daily, 3.0 cfs Feb. 4-9, 1959.

Flood of June 22, 1954, reached a stage of 11.37 ft (discharge, 4,600 cfs).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1708: 1959.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Sept. 25-30; stage-discharge relation affected by ice Jan. 13 to Mar. 5).

3.02	21	4.0	137	7.0	1,400
3.1	26	4.5	254	9.0	2,750
3.3	41	5.0	422	12.0	5,600
3.7	87	6.0	875		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	93	36	37	21	63	99	299	103	47	105	39
2	34	99	55	37	21	45	94	509	91	48	133	39
3	33	90	67	36	21	68	92	562	81	41	161	38
4	34	78	70	34	22	72	87	438	74	42	134	38
5	33	70	78	32	22	70	85	313	74	38	111	38
6	32	59	75	30	22	61	84	329	72	37	101	37
7	31	35	71	29	22	62	86	267	65	46	92	38
8	31	40	69	30	23	94	83	223	66	58	93	38
9	30	60	68	31	23	110	82	194	64	130	81	36
10	31	57	74	32	23	127	90	170	60	170	76	37
11	32	51	71	32	23	317	103	153	56	291	74	103
12	30	47	50	33	23	474	110	139	53	1,310	70	114
13	30	45	35	31	23	866	116	137	52	799	67	111
14	31	44	57	28	22	1,250	117	135	53	320	62	228
15	30	43	92	24	22	1,460	117	128	49	263	58	204
16	30	90	86	21	21	1,240	135	120	47	247	54	145
17	30	87	49	21	21	734	169	112	46	283	51	110
18	30	117	53	22	21	462	151	106	44	378	48	92
19	34	152	65	22	21	395	135	99	43	423	46	80
20	33	159	61	22	22	335	124	93	43	329	44	73
21	33	129	57	22	22	310	145	87	43	223	42	76
22	33	97	51	23	22	295	201	82	41	178	41	129
23	27	78	52	23	22	219	221	78	39	147	40	129
24	29	91	53	23	22	177	216	77	37	124	41	114
25	31	87	53	23	22	155	178	73	37	107	49	2,000
26	31	81	52	22	23	140	154	74	35	102	55	2,050
27	36	79	46	21	23	129	138	90	37	112	62	1,530
28	42	79	39	21	24	117	128	198	59	143	52	1,470
29	49	77	37	21	25	112	130	226	55	135	47	3,080
30	59	77	36	21	------	108	155	146	51	113	42	4,760
31	71	------	36	21	------	103	------	118	------	102	41	------
TOTAL	1,072	2,391	1,794	825	644	10,170	3,825	5,775	1,670	6,786	2,173	16,976
MEAN	34.6	79.7	57.9	26.6	22.2	328	128	186	55.7	219	70.1	566
MAX	71	159	92	37	25	1,460	221	562	103	1,310	161	4,760
MIN	27	35	35	21	21	45	82	73	35	37	40	36
CFSM	.11	.26	.19	.09	.07	1.07	.42	.61	.18	.72	.23	1.85
IN.	.13	.29	.22	.10	.08	1.24	.47	.70	.20	.82	.26	2.06
AC-FT	2,130	4,740	3,560	1,640	1,280	20,170	7,590	11,450	3,310	13,460	4,310	33,670

CAL YR 1971 TOTAL 64,320 MEAN 176 MAX 2,310 MIN 27 CFSM .58 IN 7.82 AC-FT 127,600
WTR YR 1972 TOTAL 54,101 MEAN 148 MAX 4,760 MIN 21 CFSM .48 IN 6.58 AC-FT 107,300

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-15	0500	7.19	1,510	9-25	1900	10.09	3,500
7-12	1315	8.01	2,030	9-30	0215	11.99	5,260

05458500 CEDAR RIVER AT JANESVILLE, IOWA

LOCATION.--Lat 42°38'54", long 92°27'54", in NE1/4 SW1/4 sec.35, T.91 N., R.14 W., Bremer County, on left bank 300 ft downstream from bridge on county highway at Janesville, 3.6 miles upstream from West Fork Cedar River, and at mile 207.7 upstream from mouth of Iowa River.

DRAINAGE AREA.--1,661 sq mi.

PERIOD OF RECORD.--October 1904 to Sept. 1906, October 1914 to September 1927, October 1932 to September 1942, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Red Cedar River at Janesville, 1905-6.

GAGE.--Water-stage recorder. Datum of gage is 868.26 ft above mean sea level. Prior to July 26, 1919, nonrecording gage at site 1,000 ft downstream at datum 4.0 ft lower. July 26, 1919, to Sept. 30, 1927, Nov. 14, 1932, to Sept. 30, 1942, and Apr. 26, 1946, to Nov. 10, 1949, nonrecording gage at county bridge 300 ft upstream at same datum.

AVERAGE DISCHARGE.--52 years (1904-6, 1914-27, 1932-42, 1945-72), 742 cfs (6.07 inches per year, 537,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,940 cfs Sept. 30, stage rising, peak occurred Oct. 1, 1972; maximum peak discharge, 5,060 cfs Sept. 27 (gage height, 5.42 ft); minimum daily discharge, 190 cfs Feb 1, 2.

Period of record: Maximum discharge, 37,000 cfs Mar. 28, 1961 (gage height, 16.33 ft); minimum daily, 28 cfs Oct. 21, 1922.

Flood of Mar. 17, 1945, reached a stage of 16.2 ft, from floodmark at site 300 ft upstream (discharge, 34,300 cfs). Flood of Mar. 16, 1929, reached a stage of about 16 ft, from information by City of Waterloo (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Diurnal fluctuation during low water caused by powerplant at Waverly, 10 miles upstream. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1906 (M), 1915-16 (M), 1917, 1918-19 (M), 1920-27, 1933-37 (M), 1940-42 (M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	305	493	514	360	190	400	643	930	1,370	410	910	370
2	300	607	567	365	190	410	626	1,050	1,340	460	1,090	360
3	300	649	472	370	192	410	605	1,610	1,060	1,020	1,070	352
4	299	599	520	370	200	415	587	2,040	844	860	871	350
5	299	543	490	365	206	425	558	2,120	718	740	780	348
6	311	514	430	360	216	435	546	2,000	624	660	600	342
7	305	458	377	360	222	445	540	1,820	567	458	700	342
8	300	389	430	355	224	460	530	1,700	479	502	624	344
9	298	402	451	350	226	520	527	1,670	559	600	632	348
10	290	395	493	345	226	600	556	1,380	450	718	583	350
11	284	389	479	310	230	700	539	1,190	452	970	559	365
12	275	389	486	290	230	800	533	1,080	479	1,520	520	409
13	275	375	493	272	232	1,080	538	980	451	2,030	480	551
14	275	370	458	260	232	1,400	587	920	472	2,310	437	666
15	275	365	423	280	230	2,000	587	853	486	1,850	389	674
16	275	395	480	300	220	3,400	631	790	458	1,400	383	640
17	275	430	350	310	220	3,260	655	754	440	1,190	370	620
18	275	493	340	320	214	3,370	635	700	428	1,240	364	745
19	281	559	320	300	226	2,810	658	700	420	1,370	354	649
20	305	670	360	290	230	2,390	525	670	410	1,430	348	567
21	293	700	350	298	230	2,080	598	640	402	1,530	347	525
22	293	736	350	280	230	1,700	745	615	394	1,300	335	498
23	281	761	340	270	230	1,450	770	575	382	1,050	359	559
24	282	853	330	270	230	1,260	1,020	551	368	950	362	654
25	284	810	330	290	230	1,060	1,060	500	350	871	365	743
26	287	493	330	280	224	942	985	521	334	692	368	2,580
27	293	567	315	240	218	848	895	565	320	649	378	4,770
28	311	543	270	240	230	821	825	645	311	700	395	4,190
29	323	514	280	220	236	774	812	780	338	760	395	5,030
30	364	486	320	220	------	714	850	1,030	370	800	390	6,890
31	420	------	350	220	------	660	------	1,060	------	860	382	------
TOTAL	9,233	15,967	12,498	9,360	6,414	38,039	20,166	32,439	16,076	31,900	16,140	35,831
MEAN	298	532	403	302	221	1,227	672	1,046	536	1,029	521	1,194
MAX	420	853	567	370	236	3,400	1,060	2,120	1,370	2,310	1,090	6,890
MIN	275	365	270	220	190	400	525	500	311	410	335	342
CFSM	.18	.32	.24	.18	.13	.74	.40	.63	.32	.62	.31	.72
IN.	.21	.36	.28	.21	.14	.85	.45	.73	.36	.71	.36	.80
AC-FT	18,310	31,670	24,790	18,570	12,720	75,450	40,000	64,340	31,890	63,270	32,010	71,070

CAL YR 1971 TOTAL 380,806 MEAN 1,043 MAX 11,100 MIN 270 CFSM .63 IN 8.53 AC-FT 755,300
WTR YR 1972 TOTAL 244,063 MEAN 667 MAX 6,890 MIN 190 CFSM .40 IN 5.47 AC-FT 484,100

PEAK DISCHARGE (BASE, 4,000 CFS).--Mar. 16 (2330) about 4,300 cfs; Sept. 27 (0930) 5,060 cfs (5.42 ft).

05458900 WEST FORK CEDAR RIVER AT FINCHFORD, IOWA

LOCATION.--Lat 42°37'50", long 92°32'24", in SW1/4 SE1/4 sec.6, T.90 N., R.14 W., Black Hawk County, on left bank 100 ft downstream from bridge on county highway C55 at Finchford, 3.2 miles upstream from Shell Rock River, and 5.0 miles upstream from mouth.

DRAINAGE AREA.--846 sq mi.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1955, published as West Fork Shell Rock River at Finchford.

GAGE.--Water-stage recorder. Datum of gage is 867.15 ft above mean sea level. Prior to June 10, 1955, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 410 cfs (6.58 inches per year, 297,000 acre-ft per year); median of yearly mean discharges, 340 cfs (5.5 inches per year, 246,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,990 cfs Sept. 30, stage rising, peak occurred Oct. 2, 1972; maximum peak discharge, 1,590 cfs May 10 (gage height, 8.77 ft); minimum daily discharge, 35 cfs Oct. 7.

Period of record: Maximum discharge, 31,900 cfs June 27, 1951 (gage height, 17.28 ft, from floodmarks); minimum daily, 5.9 cfs Feb. 26, 27, 1959.

Flood in March 1929 reached a stage of about 14 ft, from information by local resident (discharge, about 12,800 cfs).

REMARKS.--Records good except those for winter period, which are poor. An authorized diversion is made into Big Marsh (16 miles upstream from gage) of 2,100 acre-ft each year between September 1 and November 15. Net effect on daily flows at gage is unknown. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1946 (M), 1947.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	105	270	124	68	670	346	452	346	286	357	173
2	39	156	250	126	68	650	332	589	332	422	469	146
3	38	201	254	128	67	780	318	742	321	346	606	129
4	37	233	262	128	66	850	303	833	307	318	574	122
5	36	247	256	124	65	700	295	812	310	284	506	120
6	36	250	250	122	64	600	291	1,140	316	263	518	118
7	35	232	250	118	60	740	293	1,380	332	251	541	117
8	36	195	256	115	58	850	286	1,550	364	248	561	112
9	36	199	292	116	57	1,040	279	1,410	505	248	483	108
10	36	205	291	118	56	1,240	276	1,090	907	250	436	108
11	38	189	297	122	56	1,380	279	900	1,060	274	403	112
12	37	173	297	125	57	1,340	284	784	904	410	378	110
13	38	160	250	125	58	1,240	290	709	775	364	354	196
14	38	149	244	112	60	1,220	297	659	764	781	327	198
15	37	142	234	96	61	1,240	296	617	722	1,330	305	235
16	37	142	222	80	61	1,280	330	570	632	1,460	287	203
17	38	152	212	68	61	1,080	375	527	556	1,020	269	184
18	38	175	204	60	61	900	416	495	499	855	252	169
19	42	239	196	60	60	826	421	465	459	902	235	157
20	44	382	186	61	60	742	401	440	440	1,080	218	156
21	43	408	180	62	60	660	394	421	445	1,040	207	155
22	43	363	172	62	59	591	407	403	454	805	195	164
23	43	381	166	63	57	540	431	387	420	664	161	168
24	43	446	158	66	57	494	452	376	380	600	138	158
25	43	447	150	66	56	459	421	378	353	582	138	158
26	43	398	144	66	56	424	386	372	334	588	143	348
27	52	373	135	67	59	395	357	378	316	520	172	876
28	52	363	128	68	60	377	342	381	319	467	218	1,320
29	52	346	122	69	63	369	340	365	312	429	218	1,670
30	65	304	118	69	------	364	365	364	299	398	196	1,890
31	75	------	120	68	------	358	------	359	------	370	178	------
TOTAL	1,307	7,755	6,566	2,854	1,751	24,399	10,303	20,348	14,483	17,855	10,043	9,880
MEAN	42.2	259	212	92.1	60.4	787	343	656	483	576	324	329
MAX	75	447	297	128	68	1,380	452	1,550	1,060	1,460	606	1,890
MIN	35	105	118	60	56	358	276	359	299	248	138	108
CFSM	.05	.31	.25	.11	.07	.93	.41	.78	.57	.68	.38	.39
IN.	.06	.34	.29	.13	.08	1.07	.45	.89	.64	.79	.44	.43
AC-FT	2,590	15,380	13,020	5,660	3,470	48,400	20,440	40,360	28,730	35,420	19,920	19,600

CAL YR 1971 TOTAL 187,476 MEAN 514 MAX 6,020 MIN 35 CFSM .61 IN 8.24 AC-FT 371,900
WTR YR 1972 TOTAL 127,544 MEAN 348 MAX 1,890 MIN 35 CFSM .41 IN 5.61 AC-FT 253,000

PEAK DISCHARGE (BASE, 2,500 CFS).--No peak above base.

05459000 SHELL ROCK RIVER NEAR NORTHWOOD, IOWA

LOCATION.--Lat 43°24'51", long 93°13'14", in NW1/4 NW1/4 sec.9, T.99 N., R.20 W., Worth County, on right bank 50 ft downstream from bridge on county highway A27, 1.3 miles downstream from Drainage ditch 2, 2.0 miles south of Northwood, 3.7 miles upstream from Elk Creek, and 84.5 miles upstream from mouth.

DRAINAGE AREA.--300 sq mi.

PERIOD OF RECORD.--October 1945 to current year. Prior to April 1948 monthly discharge only, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 1,176.48 ft above mean sea level. Prior to May 17, 1956, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 133 cfs (6.02 inches per year, 96,360 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, about 680 cfs Mar. 16 (gage height, 6.89 ft, backwater from ice); minimum daily, 16 cfs Oct. 17.

Period of record: Maximum discharge, 3,400 cfs Apr. 8, 1965 (gage height, 12.07 ft, backwater from ice); minimum daily, 0.3 cfs Feb. 17-26, 1959.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISION (WATER YEARS).--WSP 1308: 1948 (M). WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 6-9, 21-24, Nov. 28 to Mar. 19).

3.64	16	5.0	255
3.7	20	6.0	535
4.0	50	7.0	905
4.3	97		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	136	116	33	24	30	163	244	136	128	158	46
2	23	127	124	33	24	30	155	348	111	116	146	47
3	25	124	116	34	24	30	149	380	95	107	137	43
4	26	114	98	34	24	30	140	337	89	94	121	40
5	24	90	88	35	24	30	132	312	87	79	107	38
6	21	82	81	36	25	31	127	290	83	94	104	38
7	23	130	75	37	25	32	131	280	79	138	109	39
8	21	126	72	38	25	33	131	251	77	150	97	48
9	19	90	70	39	25	34	129	231	75	215	91	46
10	21	64	69	40	26	35	140	212	74	200	79	43
11	20	60	72	40	26	60	144	195	66	189	71	60
12	19	54	75	40	26	140	143	181	58	185	65	66
13	21	53	77	40	27	300	140	166	58	177	61	195
14	26	49	80	39	27	590	137	163	55	173	57	175
15	24	47	80	38	27	640	131	162	55	184	55	141
16	19	88	77	37	27	660	123	147	54	169	52	119
17	16	120	71	36	27	661	123	131	49	193	49	98
18	17	177	65	35	27	610	106	120	45	272	48	83
19	24	176	59	34	27	500	110	110	41	241	45	75
20	29	146	53	33	27	461	106	101	48	211	44	90
21	27	116	51	32	27	343	150	95	58	211	42	92
22	26	106	47	31	28	318	244	87	52	203	42	79
23	27	130	45	30	28	285	240	76	47	193	46	62
24	27	120	43	30	28	263	210	77	45	187	44	54
25	26	108	39	29	28	242	202	73	44	174	48	134
26	25	103	38	28	28	226	187	71	42	202	53	414
27	42	92	36	27	28	215	173	72	46	228	55	356
28	64	92	34	27	28	204	175	119	158	214	52	316
29	70	90	33	26	28	195	178	239	165	199	47	336
30	139	94	32	25	------	184	186	212	147	181	44	295
31	152	------	32	25	------	172	------	174	------	164	44	------
TOTAL	1,066	3,104	2,048	1,041	765	7,584	4,613	5,656	2,239	5,471	2,213	3,668
MEAN	34.4	103	66.1	33.6	26.4	245	154	182	74.6	176	71.4	122
MAX	152	177	124	40	28	661	244	380	165	272	158	414
MIN	16	47	32	25	24	30	106	71	41	79	42	38
CFSM	.11	.34	.22	.11	.09	.82	.51	.61	.25	.59	.24	.41
IN.	.13	.38	.25	.13	.09	.94	.57	.70	.28	.68	.27	.45
AC-FT	2,110	6,160	4,060	2,060	1,520	15,040	9,150	11,220	4,440	10,850	4,390	7,280

CAL YR 1971 TOTAL 67,512 MEAN 185 MAX 1,350 MIN 16 CFSM .62 IN 8.37 AC-FT 133,900
WTR YR 1972 TOTAL 39,468 MEAN 108 MAX 661 MIN 16 CFSM .36 IN 4.89 AC-FT 78,280

PEAK DISCHARGE (BASE, 700 CFS).--No peak above base.

05459500 WINNEBAGO RIVER AT MASON CITY, IOWA

LOCATION.--Lat 43°09'54", long 93°11'33", in NE1/4 NW1/4 sec.3, T.96 N., R.20 W., Cerro Gordo County, on right bank 650 ft upstream from Thirteenth Street Bridge in Mason City, 0.1 mile downstream from Calmus Creek, and 1.0 mile upstream from Willow Creek.

DRAINAGE AREA.--526 sq mi.

PERIOD OF RECORD.--October 1932 to current year. Prior to December 1932, monthly discharge only, published in WSP 1308. Prior to October 1959, published as Lime Creek at Mason City.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,069.59 ft above mean sea level. Prior to Oct. 15, 1934, nonrecording gage at datum 6.47 ft lower. Oct. 15 to Nov. 6, 1934, nonrecording gage at different datum, and Nov. 7, 1934, to Mar. 22, 1935, nonrecording gage at present datum.

AVERAGE DISCHARGE.--40 years, 229 cfs (5.91 inches per year, 165,900 acre-ft per year); median of yearly mean discharges, 190 cfs (4.9 inches per year, 138,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,890 cfs Sept. 28 (gage height, 6.65 ft); minimum daily, 29 cfs Feb. 20.

Period of record: Maximum discharge, 10,800 cfs Mar. 30, 1933 (gage height, 15.7 ft, present datum); minimum daily, 2.5 cfs Dec. 29-31, 1933, Aug. 5, 1934.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 825: 1935-36, WSP 1438: Drainage area. WSP 1558: 1933-37, 1943 (M), 1945, 1948.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Stage-discharge relation affected by ice Nov. 6-9, 15-18, Dec. 1, 3, 4, 8-17, 21-27, Jan. 13-15, 24, 25, Feb. 1-3, Feb. 26 to Mar. 1, Mar. 6, 7, 11-19).

3.37	28	5.0	730
3.4	35	6.0	1,400
3.7	112	7.0	2,140
4.0	225		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	309	196	95	42	178	223	432	201	548	214	80
2	79	303	204	91	42	188	209	711	181	705	209	76
3	69	253	210	85	42	199	197	739	162	648	193	72
4	59	210	208	77	42	159	189	626	177	439	173	73
5	50	189	204	74	41	132	184	554	241	324	157	78
6	47	152	204	72	39	126	180	544	292	268	151	80
7	48	102	207	70	38	300	181	500	241	235	139	84
8	52	114	200	69	37	354	172	450	620	232	150	85
9	50	126	190	75	35	349	171	410	748	387	143	81
10	49	129	196	80	35	321	182	370	654	383	132	87
11	45	122	200	83	35	330	190	332	510	310	125	652
12	46	118	136	89	35	390	210	310	375	287	115	616
13	46	110	122	85	35	540	224	292	314	250	108	424
14	46	107	176	73	38	620	217	278	278	240	103	367
15	46	106	182	65	37	620	215	261	245	324	99	353
16	42	190	150	62	35	610	241	245	213	335	95	293
17	39	360	98	63	41	570	248	233	201	432	88	240
18	44	465	125	68	36	520	232	217	181	750	86	201
19	52	543	153	68	31	600	225	217	173	673	81	167
20	53	438	140	65	29	631	215	197	177	554	76	176
21	57	351	124	63	32	522	293	181	178	439	72	314
22	60	294	108	64	33	423	458	166	174	363	72	245
23	57	250	124	63	38	352	409	158	158	303	74	196
24	56	239	120	56	38	310	372	166	142	250	67	180
25	53	241	116	48	40	290	339	162	133	210	98	624
26	54	254	106	41	38	272	307	155	129	244	133	1,490
27	91	262	96	39	38	266	281	147	127	360	120	1,360
28	132	257	89	40	39	258	269	197	298	352	103	1,540
29	132	252	97	41	44	259	273	292	522	302	90	1,610
30	314	239	94	41	------	257	287	270	540	255	81	1,210
31	376	------	90	42	------	239	------	229	------	226	81	------
TOTAL	2,409	7,085	4,665	2,047	1,085	11,185	7,393	10,041	8,585	11,628	3,628	13,054
MEAN	77.7	236	150	66.0	37.4	361	246	324	286	375	117	435
MAX	376	543	210	95	44	631	458	739	748	750	214	1,610
MIN	39	102	89	39	29	126	171	147	127	210	67	72
CFSM	.15	.45	.29	.13	.07	.69	.47	.62	.54	.71	.22	.83
IN.	.17	.50	.33	.14	.08	.79	.52	.71	.61	.82	.26	.92
AC-FT	4,780	14,050	9,250	4,060	2,150	22,190	14,660	19,920	17,030	23,060	7,200	25,890

CAL YR 1971 TOTAL 123,223 MEAN 338 MAX 2,910 MIN 37 CFSM .64 IN 8.71 AC-FT 244,400
WTR YR 1972 TOTAL 82,605 MEAN 226 MAX 1,610 MIN 29 CFSM .43 IN 5.86 AC-FT 164,200

PEAK DISCHARGE (BASE, 2,000 CFS).--No peak above base.

05460000 CLEAR LAKE AT CLEAR LAKE, IOWA

LOCATION.--Lat 43°08'01", long 93°22'57", in SE1/4 NE1/4 sec.13, T.96 N., R.22 W., Cerro Gordo County, at the public bathing beach in the town of Clear Lake near dam across Clear Creek.

DRAINAGE AREA.--22.6 sq mi.

PERIOD OF RECORD.--May 1933 to current year. (No winter records 1933-52. Record fragmentary Nov. 1952 to June 1959).

GAGE.--Water-stage recorder. Datum of gage is 1,222.24 ft above mean sea level, and 4.60 ft below crest of spillway of dam at outlet. See WSP 1708 for history of changes prior to June 25, 1959.

EXTREMES.--Current year: Maximum gage height, 5.03 ft May 1; minimum, 3.90 ft Oct. 15.

Period of record: Maximum gage height observed, 5.94 ft July 3, 1951; minimum observed, 1.16 ft Dec. 20, 22-24, 1958.

REMARKS.--Lake is formed by concrete dam on Clear Creek with ungated overflow spillway 50 ft long at elevation 1,226.84 ft above mean sea level. Dam constructed in 1903. A previous outlet works had been constructed in 1887. Lake is used for conservation and recreation. Area of lake is approximately 3,600 acres.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.08	4.16	4.33	4.44		4.52	4.75	4.91	4.72	4.57	4.54	
2	4.12	4.20	4.34	4.45		4.52	4.75	4.92	4.71	4.55	4.55	
3	4.12	4.20	4.34	4.45		4.52	4.76	4.91	4.70	4.53	4.51	
4	4.09	4.14	4.34	4.45		4.54	4.76	4.91	4.69	4.50	4.50	
5	4.07	4.17	4.35	4.45		4.53	4.76	4.91	4.76	4.48	4.49	
6	4.04	4.18	4.35	4.45		4.53	4.75	4.93	4.77	4.49	4.52	
7	4.03	4.11	4.35	4.45		4.55	4.76	4.90	4.76	4.46	4.48	
8	4.03	4.11	4.36	4.45		4.53	4.77	4.89	4.80	4.49		
9	4.02	4.10	4.36	4.46		4.53	4.77	4.88	4.78	4.52		
10	4.01	4.09	4.37	4.46		4.53	4.77	4.87	4.75	4.52		
11	3.98	4.09	4.37	4.45		4.53	4.76	4.85	4.74	4.51		
12	3.97	4.08	4.38	4.45		4.55	4.76	4.83	4.72	4.53		
13	3.97	4.05	4.38			4.57	4.78	4.84	4.73	4.52		
14	3.97	4.10	4.38			4.58	4.75	4.82	4.72	4.56		
15	3.94	4.09	4.39			4.60	4.76	4.81	4.70	4.58		
16	3.92	4.20	4.39			4.61	4.80	4.80	4.66	4.57		
17	3.93	4.26	4.39			4.62	4.82	4.79	4.64	4.64		
18	3.95	4.33	4.39			4.62	4.78	4.80	4.64	4.65		4.24
19	3.97	4.34	4.39			4.62	4.77	4.79	4.63	4.65		4.23
20	3.96	4.33	4.39			4.63	4.75	4.77	4.65	4.65		4.28
21	3.98	4.28	4.39			4.65	4.79	4.76	4.62	4.64		4.30
22	3.98	4.27	4.39			4.66	4.84	4.74	4.60	4.63		4.26
23	3.97	4.29	4.39			4.66	4.81	4.72	4.58	4.62		4.25
24	3.97	4.30	4.39			4.66	4.78	4.74	4.57	4.60		4.25
25	3.97	4.29	4.39		4.53	4.67	4.77	4.73	4.56	4.56		4.48
26	3.97	4.29	4.39		4.53	4.67	4.77	4.73	4.55	4.60		4.54
27	4.06	4.31	4.39		4.53	4.70	4.77	4.73	4.56	4.57		4.52
28	4.04	4.29	4.39		4.52	4.74	4.77	4.76	4.59	4.56		4.56
29	4.05	4.33	4.39		4.52	4.74	4.80	4.80	4.58	4.55		4.57
30	4.18	4.34	4.44		------	4.74	4.82	4.75	4.57	4.55		4.55
31	4.17	------	4.44		------	4.75	------	4.74	------	4.53		------
MEAN	4.02	4.21	4.38			4.61	4.78	4.82	4.67	4.56		
MAX	4.18	4.34	4.44			4.75	4.84	4.93	4.80	4.65		
MIN	3.92	4.05	4.33			4.52	4.75	4.72	4.55	4.46		

05462000 SHELL ROCK RIVER AT SHELL ROCK, IOWA

LOCATION.--Lat 42°39'10", long 92°35'46", in NE1/4 NW1/4 sec.11, T.91 N., R.15 W., Butler County, on right bank 400 ft upstream from bridge on county highway C45 in Shell Rock, 2.2 miles downstream from Curry Creek, and 10.4 miles upstream from mouth.
DRAINAGE AREA.--1,746 sq mi.
PERIOD OF RECORD.--June 1953 to current year. Prior to July 1953, monthly discharge only, published in WSP 1728.
GAGE.--Water-stage recorder. Rockfill dam since Oct. 19, 1957. Datum of gage is 885.34 ft above mean sea level.
AVERAGE DISCHARGE.--19 years, 792 cfs (6.16 inches per year, 573,000 acre-ft per year); median of yearly mean discharge, 660 cfs (5.1 inches per year, 478,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 7,060 cfs Sept. 29 (gage height, 11.36 ft); minimum daily, 175 cfs Feb. 12, 13.

Period of record: Maximum discharge, 33,500 cfs Mar. 28, 1961 (gage height, 16.26 ft); minimum daily, 39 cfs Feb. 4-9, 1959.

Flood in 1856 reached a stage of 17.7 ft at bridge 400 ft downstream, from information furnished by Corps of Engineers (discharge, about 45,000 cfs).
REMARKS.--Records good except those for winter period, which are poor. Diurnal fluctuation at low stages caused by powerplant at Greene. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS.--WSP 1438: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	882	620	338	195	242	706	951	763	950	754	316
2	241	810	590	328	200	680	670	1,400	694	1,610	808	297
3	265	764	540	310	200	500	646	1,990	643	1,260	716	284
4	284	690	597	270	195	500	622	1,980	590	1,090	659	279
5	257	617	590	230	190	400	608	1,760	572	885	620	272
6	244	565	593	242	188	500	590	1,810	651	720	588	272
7	233	498	584	266	184	500	581	1,760	773	640	552	278
8	226	399	581	305	182	620	582	1,570	775	607	532	293
9	218	397	587	310	179	780	566	1,400	1,040	637	561	297
10	217	448	589	308	178	800	571	1,250	1,190	767	534	282
11	216	438	575	311	176	900	588	1,130	1,070	850	505	292
12	210	409	595	310	175	1,100	628	1,040	944	938	472	729
13	210	390	350	285	175	1,300	666	988	798	1,490	444	1,040
14	210	377	386	228	176	1,340	675	944	721	1,180	423	851
15	210	372	540	190	176	1,360	678	899	666	1,080	400	815
16	207	390	560	200	176	1,410	700	855	599	1,090	383	780
17	208	559	360	230	178	1,460	754	817	549	1,060	367	698
18	212	1,010	320	247	180	1,540	795	775	521	1,460	353	624
19	225	1,520	340	243	182	1,620	744	734	498	1,860	339	546
20	222	1,320	400	238	186	1,830	703	699	488	1,620	324	496
21	217	1,090	470	232	190	1,680	700	670	474	1,370	312	474
22	225	917	463	234	194	1,400	826	637	467	1,140	304	597
23	236	805	460	236	200	1,170	1,200	612	464	1,010	291	625
24	232	723	453	274	216	1,020	1,140	591	442	911	276	539
25	225	687	447	248	214	938	1,040	580	415	804	294	632
26	221	707	417	212	222	860	972	579	397	765	344	2,620
27	246	708	314	207	222	821	897	571	387	767	462	3,710
28	273	718	230	194	226	802	847	544	441	922	429	3,620
29	371	715	280	194	230	767	835	565	533	919	388	5,780
30	432	694	330	196	------	754	855	843	896	838	354	6,220
31	697	------	340	196	------	736	------	858	------	765	329	------
TOTAL	7,935	20,619	14,501	7,812	5,585	30,330	22,385	31,802	19,461	32,005	14,117	34,558
MEAN	256	687	468	252	193	978	746	1,026	649	1,032	455	1,152
MAX	697	1,520	620	338	230	1,830	1,200	1,990	1,190	1,860	808	6,220
MIN	207	372	230	190	175	242	566	544	387	607	276	272
CFSM	.15	.39	.27	.14	.11	.56	.43	.59	.37	.59	.26	.66
IN.	.17	.44	.31	.17	.12	.65	.48	.68	.41	.68	.30	.74
AC-FT	15,740	40,900	28,760	15,500	11,080	60,160	44,400	63,080	38,600	63,480	28,000	68,550

CAL YR 1971 TOTAL 402,868 MEAN 1,104 MAX 11,400 MIN 181 CFSM .63 IN 8.58 AC-FT 799,100
WTR YR 1972 TOTAL 241,110 MEAN 659 MAX 6,220 MIN 175 CFSM .38 IN 5.14 AC-FT 478,200

PEAK DISCHARGE (BASE, 4,000 CFS).--Sept. 29 (2300) 7,060 cfs (11.36 ft).

05463000 BEAVER CREEK AT NEW HARTFORD, IOWA

LOCATION.--Lat 42°30'50", long 92°37'55", in SE1/4 SE1/4 sec.28, T.90 N., R.15 W., Butler County, on downstream side of center bridge pier of bridge on county highway T55, 0.2 mile north of New Hartford, and 8 miles upstream from mouth.
DRAINAGE AREA.--347 sq mi.
PERIOD OF RECORD.--October 1945 to current year. *Prior to April 1948, monthly discharge only,* published in WSP 1308.
GAGE.--Water-stage recorder. Datum of gage is 882.44 ft above mean sea level. Prior to July 14, 1959, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--27 years, 173 cfs (6.77 inches per year, 125,300 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 3,020 cfs May 7 (gage height, 9.51 ft); minimum daily, 13 cfs Feb. 8-10.

Period of record: Maximum discharge, 18,000 cfs June 13, 1947 (gage height, 13.5 ft, from graph based on gage readings), from rating curve extended above 7,300 cfs; minimum daily, 2.3 cfs Jan. 20-24, 1956.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1948-49. WSP 1708: 1947 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Aug. 4-16, 27, Sept. 12-16, 26-30; stage-discharge relation affected by ice Nov. 29 to Mar. 19).

1.11	13	2.3	83	7.0	905
1.3	19	3.0	149	8.0	1,360
1.5	28	4.0	276	9.0	2,330
1.8	46	6.0	651	10.0	3,840

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	57	80	24	15	88	105	190	166	151	94	95
2	22	83	78	24	14	280	101	299	153	204	276	92
3	22	99	77	25	14	400	98	285	143	197	635	89
4	22	73	60	23	14	450	95	233	134	161	380	86
5	21	63	55	23	14	300	94	229	134	145	280	84
6	22	57	51	23	14	400	93	1,060	179	136	548	82
7	23	62	49	23	14	560	93	2,620	188	132	937	80
8	23	45	51	23	13	640	89	1,520	189	127	614	79
9	23	51	53	24	13	800	88	846	675	125	464	76
10	24	50	54	25	13	700	88	595	740	120	362	75
11	24	47	50	26	14	630	88	466	386	122	306	81
12	24	44	47	26	14	600	87	391	307	278	261	92
13	24	43	45	26	14	540	89	347	429	299	228	325
14	24	42	44	25	15	440	91	324	833	201	203	361
15	24	41	42	24	15	397	87	300	872	168	183	221
16	24	42	40	22	15	286	121	270	613	145	159	173
17	24	45	38	20	15	229	202	245	411	153	139	146
18	24	50	36	17	15	205	186	224	338	207	128	128
19	27	55	33	15	15	203	156	205	298	197	120	117
20	30	56	30	14	15	188	136	191	285	169	113	111
21	26	50	28	14	15	170	137	179	318	151	107	113
22	24	44	27	14	15	156	173	169	274	134	102	117
23	25	45	28	14	15	136	163	157	237	123	98	110
24	26	49	28	14	15	125	141	158	214	127	96	107
25	27	50	27	15	15	117	126	166	197	115	98	107
26	26	50	24	15	15	111	115	154	182	112	122	290
27	30	50	24	15	15	111	107	286	170	110	160	675
28	35	52	25	15	16	116	104	282	168	105	129	537
29	35	64	25	15	20	117	111	211	171	101	114	830
30	39	45	25	15	------	115	124	203	163	97	104	1,020
31	50	------	24	15	------	110	------	190	------	92	98	------
TOTAL	817	1,604	1,298	613	426	9,720	3,488	12,995	9,567	4,704	7,658	6,499
MEAN	26.4	53.5	41.9	19.8	14.7	314	116	419	319	152	247	217
MAX	50	99	80	26	20	800	202	2,620	872	299	937	1,020
MIN	21	41	24	14	13	88	87	154	134	92	94	75
CFSM	.08	.15	.12	.06	.04	.90	.33	1.21	.92	.44	.71	.63
IN.	.09	.17	.14	.07	.05	1.04	.37	1.39	1.03	.50	.82	.70
AC-FT	1,620	3,180	2,570	1,220	845	19,280	6,920	25,780	18,980	9,330	15,190	12,890

CAL YR 1971 TOTAL 71,130 MEAN 195 MAX 4,710 MIN 19 CFSM .56 IN 7.63 AC-FT 141,100
WTR YR 1972 TOTAL 59,389 MEAN 162 MAX 2,620 MIN 13 CFSM .47 IN 6.37 AC-FT 117,800

PEAK DISCHARGE (BASE, 1,400 CFS).--May 7 (1045) 3,020 cfs (9.51 ft).

05463500 BLACK HAWK CREEK AT HUDSON, IOWA

LOCATION.--Lat 42°24'28", long 92°27'47", in SW1/4 NE1/4 sec.27, T.88 N., R.14 W., Black Hawk County, on left bank 35 ft downstream from bridge on State highway 58, 0.2 mile northwest of Chicago Great Western Railway tracks at the west edge of Hudson, 4.5 miles upstream from Prescotts Creek, and 9.6 miles upstream from mouth.
DRAINAGE AREA.--303 sq mi.
PERIOD OF RECORD.--April 1952 to current year.
GAGE.--Water-stage recorder. Datum of gage is 865.03 ft above mean sea level.
AVERAGE DISCHARGE.--20 years, 146 cfs (6.54 inches per year, 105,800 acre-ft per year); median of yearly mean discharges, 120 cfs (5.4 inches per year, 86,900 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,320 cfs June 15, Aug. 7 (gage height, 11.66 ft); maximum gage height, 14.08 ft Mar. 1 (backwater from ice); minimum daily discharge, 12 cfs Feb. 20-26.
Period of record: Maximum discharge, 19,300 cfs July 9, 1969 (gage height, 18.23 ft); minimum daily, 1.9 cfs Jan. 21-23, July 30, 1956.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS.--WSP 1438: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	43	20	24	18	790	79	321	75	138	104	87
2	16	68	22	26	18	840	74	375	71	132	623	88
3	16	65	23	26	17	400	71	283	68	130	664	83
4	16	41	24	26	17	300	67	222	64	114	387	79
5	16	34	27	24	17	220	69	188	70	105	287	76
6	15	28	31	18	16	250	68	325	117	100	761	74
7	15	19	32	21	16	300	68	634	114	100	1,230	77
8	16	22	33	20	16	600	62	564	154	92	724	79
9	16	29	33	20	16	960	66	429	342	92	526	71
10	16	30	39	21	15	900	64	337	203	85	418	72
11	15	26	62	25	14	1,000	63	282	156	85	367	88
12	15	25	56	26	14	1,000	62	241	137	431	316	95
13	16	24	33	25	14	1,040	66	221	586	934	324	161
14	16	23	44	21	14	920	63	205	902	570	246	261
15	16	22	52	19	14	285	62	197	1,220	316	207	152
16	15	23	32	16	15	237	116	181	602	237	185	122
17	17	23	29	16	13	201	258	166	430	220	166	108
18	16	27	40	17	13	162	192	152	352	373	148	94
19	18	25	37	20	13	140	150	138	330	298	134	89
20	20	25	36	30	12	128	126	129	600	228	124	85
21	21	20	37	42	12	117	136	120	391	186	117	86
22	24	17	38	34	12	123	226	113	310	154	110	79
23	20	21	33	37	12	107	200	105	255	134	108	78
24	19	22	36	28	12	96	161	106	221	123	106	78
25	18	26	34	37	12	88	138	103	198	109	104	80
26	18	27	33	23	12	82	122	96	178	118	110	94
27	21	26	23	21	13	82	110	93	163	162	111	177
28	27	22	26	21	14	88	107	89	197	119	103	138
29	28	18	23	20	14	93	113	90	175	107	93	128
30	32	19	22	18	------	93	116	84	158	97	84	114
31	37	------	26	19	------	85	------	78	------	90	82	------
TOTAL	587	840	1,036	741	415	11,727	3,275	6,667	8,839	6,179	9,069	3,093
MEAN	18.9	28.0	33.4	23.9	14.3	378	109	215	295	199	293	103
MAX	37	68	62	42	18	1,040	258	634	1,220	934	1,230	261
MIN	15	17	20	16	12	82	62	78	64	85	82	71
CFSM	.06	.09	.11	.08	.05	1.25	.36	.71	.97	.66	.97	.34
IN.	.07	.10	.13	.09	.05	1.44	.40	.82	1.09	.76	1.11	.38
AC-FT	1,160	1,670	2,050	1,470	823	23,260	6,500	13,220	17,530	12,260	17,990	6,130

CAL YR 1971 TOTAL 60,224 MEAN 165 MAX 3,110 MIN 14 CFSM .54 IN 7.39 AC-FT 119,500
WTR YR 1972 TOTAL 52,468 MEAN 143 MAX 1,230 MIN 12 CFSM .47 IN 6.44 AC-FT 104,100

PEAK DISCHARGE (BASE, 1,200 CFS).--June 15 (1530) 1,320 cfs (11.66 ft); Aug. 7 (1545) 1,320 cfs (11.65 ft).

05464000 CEDAR RIVER AT WATERLOO, IOWA

LOCATION.--Lat 42°29'44", long 92°20'03", in NW1/4 NW1/4 sec.25, T.89 N., R.13 W., Black Hawk County, on left bank at foot of East Seventh Street, 0.3 mile upstream from Eleventh Avenue Bridge in Waterloo, 1.1 mile downstream from Black Hawk Creek, and at mile 187.9 above mouth of Iowa River.

DRAINAGE AREA.--5,146 sq mi.

PERIOD OF RECORD.--October 1940 to current year. Prior to April 1941, monthly discharge only, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 824.14 ft above mean sea level.

AVERAGE DISCHARGE.--32 years, 2,610 cfs (6.89 inches per year, 1,891,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 14,100 cfs Sept. 30, stage rising, peak occurred Oct. 1, 1972; maximum peak discharge, 9,030 cfs May 8 (gage height, 8.06 ft); minimum daily discharge, 540 cfs Feb. 18.

Period of record: Maximum discharge, 76,700 cfs Mar. 29, 1961 (gage height, 21.86 ft); minimum daily, 152 cfs Jan. 28, 1959.

Flood of Mar. 16, 1929, reached a stage of about 20 ft, determined by Corps of Engineers, from information by City of Waterloo (discharge, 65,000 cfs). Flood of Apr. 2, 1933, reached a stage about 0.5 ft lower than Mar. 16, 1929, from information by City of Waterloo (discharge, 61,000 cfs).

REMARKS.--Records good except those for winter period, which are fair. Slight diurnal fluctuation during low flow caused by powerplant above station. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1950.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 13-21, Dec. 28 to Jan. 5, Jan. 13-18, 23-25, Feb. 2, 3, 17-20, Feb. 27 to Mar. 12).

4.92	540	6.0	2,670
5.0	660	9.0	12,400
5.5	1,520	10.0	15,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	759	1,640	1,630	1,040	637	3,510	2,110	3,140	2,790	2,090	2,470	1,200
2	747	1,850	1,520	1,000	636	3,600	2,020	3,740	2,560	3,520	3,230	1,120
3	736	1,890	1,580	880	600	3,500	1,950	4,670	2,280	3,600	3,860	1,030
4	748	1,830	1,680	830	610	2,300	1,720	5,690	2,020	2,790	3,420	996
5	762	1,690	1,630	820	620	1,800	1,770	5,800	1,940	2,280	2,940	982
6	744	1,560	1,600	855	621	1,780	1,750	6,930	1,830	1,980	3,300	964
7	730	1,430	1,420	906	599	2,800	1,740	8,130	1,950	1,780	3,850	1,120
8	733	1,270	1,520	943	591	3,400	1,710	8,650	2,050	1,670	3,960	1,020
9	698	1,210	1,860	982	587	4,300	1,680	6,830	2,440	1,690	2,890	1,000
10	689	1,210	1,790	966	579	4,000	1,690	5,430	3,520	1,830	2,660	1,020
11	685	1,230	1,730	950	576	3,740	1,670	4,650	3,610	2,320	2,390	1,080
12	686	1,190	1,720	963	576	4,240	1,700	4,140	3,420	3,410	2,170	1,220
13	687	1,120	1,240	820	576	4,680	1,730	3,840	3,320	4,830	2,020	3,420
14	690	1,100	1,300	740	585	5,580	1,820	3,570	4,270	5,540	1,810	2,780
15	684	1,280	1,590	700	590	6,840	1,850	3,390	4,230	4,760	1,710	2,530
16	686	1,110	1,720	760	596	7,310	2,140	3,010	3,770	4,690	1,590	2,540
17	681	1,160	1,120	750	570	7,890	2,100	2,830	2,890	4,380	1,490	2,380
18	686	1,490	920	770	540	7,070	2,410	2,710	2,500	4,200	1,410	2,130
19	719	2,100	1,150	749	560	6,120	2,380	2,550	2,390	4,770	1,340	1,890
20	733	2,590	1,190	760	580	5,620	2,190	2,390	2,540	5,040	1,250	1,750
21	741	2,630	1,400	749	585	5,360	2,200	2,240	2,320	4,920	1,210	1,610
22	726	2,360	1,370	758	564	4,670	2,440	2,150	2,170	4,050	1,170	1,530
23	725	2,120	1,480	720	606	4,080	2,780	2,090	2,010	3,530	1,120	1,670
24	719	2,250	1,450	690	588	3,400	3,070	2,010	1,870	3,230	1,070	1,730
25	718	1,870	1,380	690	605	3,140	3,090	1,740	1,760	2,890	1,120	1,760
26	720	1,870	1,350	701	591	2,810	2,890	1,840	1,690	2,680	1,160	3,420
27	786	1,830	987	669	600	2,630	2,670	1,820	1,630	2,400	1,240	7,670
28	793	1,820	680	643	660	2,510	2,540	1,920	1,720	2,460	1,360	9,330
29	845	1,810	780	626	700	2,390	2,440	1,880	1,690	2,480	1,320	9,690
30	1,040	1,690	960	631	------	2,310	2,470	2,140	1,890	2,480	1,240	12,600
31	1,120	------	980	627	------	2,200	------	2,570	------	2,400	1,170	------
TOTAL	23,216	50,200	42,727	24,688	17,328	125,580	64,720	114,490	75,070	100,690	62,940	83,182
MEAN	749	1,673	1,378	796	598	4,051	2,157	3,693	2,502	3,248	2,030	2,773
MAX	1,120	2,630	1,860	1,040	700	7,890	3,090	8,650	4,270	5,540	3,960	12,600
MIN	681	1,100	680	626	540	1,780	1,670	1,740	1,630	1,670	1,070	964
CFSM	.15	.33	.27	.15	.12	.79	.42	.72	.49	.63	.39	.54
IN.	.17	.36	.31	.18	.13	.91	.47	.83	.54	.73	.45	.60
AC-FT	46,050	99,570	84,750	48,970	34,370	249,100	128,400	227,100	148,900	199,700	124,800	165,000

CAL YR 1971 TOTAL 1,163,040 MEAN 3,186 MAX 25,900 MIN 680 CFSM .62 IN 8.41 AC-FT 2,307,000
WTR YR 1972 TOTAL 784,831 MEAN 2,144 MAX 12,600 MIN 540 CFSM .42 IN 5.67 AC-FT 1,557,000

PEAK DISCHARGE (BASE, 13,000 CFS).--No peak above base.

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA

LOCATION.--Lat 42°13'32", long 92°36'39", in SW1/4 SW1/4 sec.28, T.86 N., R.15 W., Tama County, on left bank 10 ft downstream from bridge on county highway, 1 mile upstream from Half Mile Creek and 4.7 miles southeast of Lincoln.

DRAINAGE AREA.--13.78 sq mi.

PERIOD OF RECORD.--October 1962 to September 1967, October 1969 to current year.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir. Datum of gage is 931.26 ft above mean sea level.

AVERAGE DISCHARGE.--8 years (1963-67, 1970-72), 7.20 cfs (7.10 inches per year, 5,220 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 408 cfs June 13 (gage height, 11.86 ft); maximum gage height, 12.88 ft Feb. 29 (backwater from ice); minimum daily discharge, 0.15 cfs Oct. 3, 5, 6.

Period of record: Maximum discharge, 708 cfs Mar. 13, 1971 (gage height, 12.60 ft); maximum gage height, 13.65 ft Feb. 18, 1971 (backwater from ice); minimum daily discharge, 0.11 cfs July 29, 1964.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 15 to Mar. 7)

5.6	0.11	6.6	7.9
5.7	.25	7.0	22
5.8	.45	8.0	69
5.9	.74	9.0	123
6.0	1.1	10.0	183
6.2	2.2	11.0	261
6.4	4.1	12.0	462

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	2.5	.50	.56	.60	35	2.8	7.1	2.8	7.3	21	5.3
2	.21	3.7	.45	.50	.60	8.0	2.8	6.9	2.7	7.1	106	5.0
3	.15	1.5	.54	.45	.59	2.5	2.8	5.5	2.6	6.4	24	4.8
4	.16	1.1	.62	.43	.59	2.2	2.8	4.8	2.5	6.1	15	5.0
5	.15	.97	.80	.40	.60	2.0	2.4	4.6	21	5.9	27	4.9
6	.15	.63	.90	.43	.61	150	2.5	8.3	14	5.8	111	4.6
7	.16	.58	1.1	.50	.59	90	2.3	18	9.8	5.5	30	11
8	.16	.68	1.4	.70	.58	8.7	2.2	16	18	5.4	30	7.6
9	.17	.95	1.8	1.0	.59	6.3	2.1	13	14	5.2	24	6.9
10	.20	.78	3.5	2.1	.60	5.7	2.1	11	10	4.6	19	8.4
11	.23	.70	3.2	1.8	.61	19	2.0	10	8.5	4.4	25	14
12	.22	.66	2.5	1.4	.63	6.8	2.0	8.8	18	14	81	11
13	.21	.63	2.0	.90	.64	11	1.9	8.0	91	14	42	9.2
14	.25	.63	1.8	.45	.65	5.1	1.8	6.4	275	9.4	23	7.8
15	.22	.66	2.0	.30	.65	9.7	1.8	5.3	46	8.3	18	7.1
16	.20	.66	1.4	.25	.67	5.9	19	5.0	23	6.7	16	6.5
17	.17	.68	1.1	.22	.70	4.0	13	4.8	19	24	15	5.6
18	.25	.75	1.2	3.0	.70	3.1	8.2	4.5	16	24	13	5.2
19	.33	.66	1.3	2.0	.71	3.0	6.2	4.3	76	17	12	5.0
20	.40	.52	1.1	1.6	.72	2.9	5.2	4.5	36	11	12	4.9
21	.37	.43	1.0	1.3	.70	3.9	13	4.2	19	8.5	12	4.5
22	.29	.35	1.0	1.1	.70	3.9	14	4.0	15	7.4	9.8	4.3
23	.28	.40	1.1	1.0	.74	3.1	8.8	3.9	14	6.2	6.9	4.3
24	.28	.48	1.0	.84	.88	2.6	6.0	4.1	12	4.7	6.5	4.3
25	.27	.60	.90	.74	1.0	2.4	5.2	3.8	12	4.2	7.0	4.5
26	.27	.84	.80	.72	1.1	2.3	4.6	3.8	11	7.1	6.7	6.6
27	.57	.82	.72	.68	.93	2.9	4.1	3.7	11	5.6	6.3	5.5
28	.40	.80	.69	.68	40	3.6	4.1	3.4	16	5.1	5.7	7.3
29	.46	.90	.72	.66	120	3.8	4.7	3.2	12	4.5	5.3	7.7
30	1.2	.84	.75	.62	------	3.7	4.8	3.0	7.9	4.0	5.2	6.4
31	.83	------	.78	.62	------	3.0	------	2.8	------	3.8	5.0	------
TOTAL	9.40	26.40	38.67	27.95	178.68	416.1	155.2	196.7	835.8	253.2	740.4	195.2
MEAN	.30	.88	1.25	.90	6.16	13.4	5.17	6.35	27.9	8.17	23.9	6.51
MAX	1.2	3.7	3.5	3.0	120	150	19	18	275	24	111	14
MIN	.15	.35	.45	.22	.58	2.0	1.8	2.8	2.5	3.8	5.0	4.3
CFSM	.02	.06	.09	.07	.45	.97	.38	.46	2.02	.59	1.73	.47
IN.	.03	.07	.10	.08	.48	1.12	.42	.53	2.26	.68	2.00	.53
AC-FT	19	52	77	55	354	825	308	390	1,660	502	1,470	387

CAL YR 1971 TOTAL 3,574.74 MEAN 9.79 MAX 411 MIN .15 CFSM .71 IN 9.65 AC-FT 7,090
WTR YR 1972 TOTAL 3,073.70 MEAN 8.40 MAX 275 MIN .15 CFSM .61 IN 8.30 AC-FT 6,100

PEAK DISCHARGE (BASE, 350 CFS).--Mar. 6 (time unknown) about 400 cfs; June 13 (2215) 408 cfs (11.86 ft).

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA

LOCATION.--Lat 42°12'40", long 92°36'39", in SW1/4 SW1/4 sec.33, T.86 N., R.15 W., Tama County, on right bank 10 ft downstream from bridge on county highway, 0.8 mile upstream from mouth, and 5.3 miles northeast of Gladbrook.

DRAINAGE AREA.--1.33 sq mi.

PERIOD OF RECORD.--October 1962 to September 1967, October 1969 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 948.16 ft above mean sea level.

AVERAGE DISCHARGE.--8 years (1963-67, 1970-72), 0.69 cfs (7.05 inches per year, 500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 158 cfs Aug. 2 (gage height, 7.41 ft); no flow Oct. 1-20, 22-26.
Period of record: Maximum discharge, 307 cfs July 9, 1965 (gage height, 9.24 ft); no flow for several days in 1964-67, 1971-72.

REMARKS.--Records fair except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.50	.05	.07	.03	1.0	.24	.68	.27	.52	4.6	.58
2	0	.34	.06	.06	.03	.10	.23	.66	.26	.48	44	.56
3	0	.13	.06	.06	.03	.06	.23	.58	.24	.45	2.7	.56
4	0	.10	.06	.06	.03	.05	.21	.50	.22	.42	2.0	.54
5	0	.09	.07	.06	.03	.04	.20	.50	1.3	.38	5.5	.52
6	0	.08	.10	.06	.02	.47	.21	.77	.68	.36	4.4	.49
7	0	.07	.13	.05	.02	3.2	.19	1.9	.53	.34	3.7	.77
8	0	.08	.14	.07	.02	.45	.19	1.5	1.6	.33	3.6	.57
9	0	.09	.14	.10	.02	.19	.16	1.1	.90	.32	2.3	.51
10	0	.10	.66	.20	.02	.23	.15	.92	.66	.31	1.9	.75
11	0	.10	.39	.14	.02	1.7	.14	.84	.61	.30	2.3	1.2
12	0	.10	.24	.09	.02	.32	.14	.80	.97	5.2	4.3	.85
13	0	.08	.19	.07	.02	.35	.13	.73	.90	1.9	3.3	.71
14	0	.08	.18	.05	.02	.46	.12	.71	4.2	.87	2.6	.61
15	0	.07	.24	.03	.02	.54	.11	.64	2.7	.73	2.0	.54
16	0	.07	.17	.03	.02	.62	1.9	.65	1.5	.61	1.6	.47
17	0	.07	.12	.02	.02	.34	.91	.61	1.2	2.0	1.4	.41
18	0	.08	.11	.25	.02	.17	.62	.56	.94	2.9	1.2	.36
19	0	.08	.13	.18	.02	.17	.50	.50	.96	1.7	1.0	.34
20	0	.08	.12	.14	.02	.20	.44	.47	1.1	1.6	.96	.37
21	.01	.07	.10	.11	.02	.28	1.6	.44	.92	.79	.88	.32
22	0	.06	.09	.10	.02	.35	1.1	.43	.78	.68	.82	.29
23	0	.06	.11	.08	.02	.32	.79	.41	.70	.62	.79	.29
24	0	.07	.10	.07	.02	.28	.64	.42	.61	.56	.74	.29
25	0	.07	.09	.06	.04	.26	.56	.41	.57	.50	.85	.28
26	0	.08	.07	.05	.03	.25	.49	.42	.54	.79	.78	.43
27	.01	.14	.06	.05	.03	.28	.47	.42	.60	.91	.72	.30
28	.01	.14	.05	.05	3.0	.33	.50	.43	.68	.88	.65	.30
29	.01	.12	.06	.04	20	.35	.50	.55	.63	.83	.61	.27
30	.10	.12	.07	.04	------	.30	.58	.53	.58	.75	.57	.32
31	.12	------	.08	.04	------	.29	------	.35	------	.80	.55	------
TOTAL	.26	3.32	4.24	2.48	23.63	13.91	14.25	20.43	28.35	29.83	103.92	14.80
MEAN	.008	.11	.14	.080	.81	.45	.48	.66	.95	.96	3.35	.49
MAX	.12	.50	.66	.25	20	3.2	1.9	1.9	4.2	5.2	44	1.2
MIN	0	.06	.05	.02	.02	.04	.11	.35	.22	.30	.55	.27
CFSM	.006	.08	.11	.06	.61	.34	.36	.50	.71	.72	2.50	.37
IN.	.007	.09	.12	.07	.66	.39	.40	.57	.79	.83	2.89	.41
AC-FT	.5	6.6	8.4	4.9	47	28	28	41	56	59	206	29

CAL YR 1971 TOTAL 260.19 MEAN .71 MAX 22 MIN 0 CFSM .53 IN 7.28 AC-FT 516
WTR YR 1972 TOTAL 258.82 MEAN .71 MAX 44 MIN 0 CFSM .53 IN 7.24 AC-FT 513

PEAK DISCHARGE (BASE, 90 CFS).--Aug. 2 (0230) 158 cfs (7.41 ft).

05464137 FOURMILE CREEK NEAR TRAER, IOWA

LOCATION.--Lat 42°12'07", long 92°33'44", near center of sec.2, T.85 N., R.15 W., Tama County, on left bank 10 ft downstream from bridge on county highway T69, 2 miles upstream from mouth, and 5.0 miles northwest of Traer.

DRAINAGE AREA.--19.51 sq mi.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 905.87 ft above mean sea level.

AVERAGE DISCHARGE.--10 years, 10.6 cfs (7.38 inches per year, 7,680 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 442 cfs June 14 (gage height, 12.00 ft); maximum gage height, 13.1 ft Feb. 29 (backwater from ice); minimum daily discharge, 0.22 cfs Oct. 17, 19.

Period of record: Maximum discharge, 628 cfs Mar. 17, 1969 (gage height, 12.39 ft); maximum gage height, 13.41 ft Feb. 19, 1971 (backwater from ice); minimum daily discharge, 0.2 cfs Dec. 16, 17, 23, 1963, Nov. 30, 1964, Feb. 1, 1965 and Jan. 10, 1968.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 21 to Dec. 8, Dec. 12 to Mr. 4).

6.24	.21	7.0	5.3
6.3	.31	7.4	14
6.4	.52	8.0	44
6.5	.84	9.0	122
6.6	1.3	11.0	264
6.8	2.8	12.0	425

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	4.6	.84	1.0	.94	70	3.3	12	5.3	11	20	8.1
2	.41	9.4	.72	.80	.93	25	3.1	14	5.1	10	150	7.8
3	.23	2.9	.66	.70	.91	15	3.1	16	4.9	9.8	35	7.5
4	.27	2.0	1.0	.64	.90	9.0	2.9	15	4.6	9.2	24	7.3
5	.26	1.5	1.2	.60	.90	5.4	3.0	14	19	9.0	34	7.1
6	.25	1.0	1.5	.66	.94	99	3.1	16	26	8.8	108	6.7
7	.29	1.1	2.0	.80	.96	151	3.2	32	17	8.4	38	12
8	.26	1.2	2.5	1.2	1.0	35	2.7	30	30	8.3	35	9.3
9	.29	1.3	3.1	1.9	1.0	10	2.8	25	26	8.2	26	8.0
10	.36	1.1	9.4	4.0	1.1	8.2	2.8	24	22	8.1	21	9.3
11	.41	.90	8.3	3.1	1.1	21	2.8	23	16	7.6	28	15
12	.43	1.0	4.7	2.5	1.1	8.9	3.0	20	36	25	99	14
13	.36	1.0	3.5	1.5	1.1	12	3.2	17	43	13	42	11
14	.50	1.1	3.0	.90	1.2	6.0	2.9	12	291	11	26	10
15	.45	1.0	3.5	.68	1.2	11	2.9	12	63	10	21	9.6
16	.35	1.1	2.5	.40	1.2	8.1	27	11	38	8.8	18	8.9
17	.22	1.1	2.0	.35	1.3	3.9	21	9.9	31	24	16	7.9
18	.29	1.4	2.2	6.0	1.2	3.7	16	8.9	26	24	14	7.3
19	.22	1.2	2.3	3.5	1.2	3.9	13	8.3	55	15	13	7.0
20	.36	.97	2.0	2.5	1.3	3.7	10	7.7	92	13	12	7.1
21	.39	.80	1.7	2.1	1.3	4.4	20	7.0	27	11	11	6.7
22	.33	.60	1.5	1.8	1.3	3.3	22	6.6	23	9.6	10	6.3
23	.32	.64	1.8	1.6	1.4	3.6	14	6.3	20	8.9	10	6.3
24	.31	.70	1.9	1.9	1.5	3.1	13	6.8	18	8.0	9.9	6.3
25	.29	.80	1.5	1.3	1.6	3.0	12	6.0	17	7.3	10	6.5
26	.30	1.1	1.6	1.7	2.0	3.0	10	6.5	19	12	10	9.0
27	.48	1.7	1.7	1.2	1.6	3.6	8.2	6.3	14	9.8	9.6	7.9
28	.57	1.1	1.0	1.1	55	4.3	8.2	6.2	21	8.8	8.9	8.0
29	.53	1.2	1.1	1.0	150	4.6	9.0	6.0	17	7.9	8.3	11
30	1.5	1.1	1.2	1.0	------	3.8	9.0	5.8	12	7.0	8.0	8.6
31	1.3	------	1.3	.96	------	3.6	------	5.5	------	6.9	7.9	------
TOTAL	13.08	46.11	72.92	48.29	236.98	552.9	259.0	396.8	996.9	339.0	843.0	258.1
MEAN	.42	1.54	2.35	1.56	8.17	17.8	8.63	12.8	33.2	10.9	27.2	8.60
MAX	1.5	9.4	9.4	6.0	150	151	27	32	291	25	150	15
MIN	.22	.60	.66	.35	.90	3.0	2.7	5.5	4.6	6.9	7.9	6.3
CFSM	.02	.08	.12	.08	.42	.91	.44	.66	1.70	.56	1.39	.44
IN.	.02	.09	.14	.09	.45	1.05	.49	.76	1.90	.65	1.61	.49
AC-FT	26	91	145	96	470	1,100	514	787	1,980	672	1,670	512

CAL YR 1971 TOTAL 4,798.70 MEAN 13.1 MAX 396 MIN .22 CFSM .67 IN 9.15 AC-FT 9,520
WTR YR 1972 TOTAL 4,063.08 MEAN 11.1 MAX 291 MIN .22 CFSM .57 IN 7.75 AC-FT 8,060

PEAK DISCHARGE (BASE, 400 CFS).--June 14 ([illegible]) 442 cfs (12.00 ft).

05464500 CEDAR RIVER AT CEDAR RAPIDS, IOWA

LOCATION.--Lat 41°58'14", long 91°40'01", in SE1/4 NW1/4 sec.28, T.83 N., R.7 W., Linn County, on right bank 400 ft upstream from bridge on Eighth Avenue in Cedar Rapids, 2.7 miles upstream from Prairie Creek, and at mile 112.7 upstream from mouth of Iowa River.

DRAINAGE AREA.--6,510 sq mi.

PERIOD OF RECORD.--October 1902 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 700.47 ft above mean sea level. Prior to Aug. 20, 1920, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--70 years, 3,142 cfs (6.55 inches per year, 2,276,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,400 cfs May 8 (gage height, 6.36 ft); minimum daily, 700 cfs Jan. 6.

Period of record: Maximum discharge, 73,000 cfs Mar. 31, 1961 (gage height, 19.66 ft); maximum gage height, 20.0 ft Mar. 18, 1929; minimum discharge, 53 cfs Jan. 6, 1950, caused by construction operations upstream; minimum daily, 212 cfs Dec. 10, 1949.

Flood in June 1851 reached a stage of about 20 ft (discharge, 65,000 cfs, estimated).

REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 955: 1924. WSP 1308: 1904, 1906-13, 1915, 1917, 1919-24, 1928, 1930. WSP 1438: Drainage area. WSP 1558: 1915-18 (M), 1920 (M), 1922 (M), 1929, 1933, 1943.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 15-29; stage-discharge relation affected by ice Jan. 2-9, Jan. 12 to Mar. 14).

Oct. 1 to Aug. 17		Aug. 18 to Sept. 30	
2.8	690	3.4	1,800
3.2	1,350	4.0	3,130
3.8	2,650	5.0	6,200
4.6	5,300	6.0	10,200
6.0	11,000		
7.0	15,500		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	910	1,460	2,080	1,170	900	4,500	2,760	4,460	2,870	2,450	4,080	2,960
2	925	1,890	2,000	1,400	850	5,000	2,640	4,860	3,170	2,590	8,460	2,700
3	940	2,140	1,920	1,400	900	4,700	2,550	5,180	3,220	2,880	8,100	2,340
4	910	2,170	1,920	1,200	1,050	4,400	2,430	5,580	2,950	4,030	7,220	2,120
5	895	2,190	1,960	900	1,000	3,600	2,350	6,340	2,790	3,630	6,700	1,980
6	895	2,100	2,020	700	1,100	2,800	2,190	7,180	2,720	3,120	7,780	1,880
7	910	1,960	2,000	900	1,150	3,200	2,190	9,260	2,640	2,780	9,020	2,010
8	910	1,950	1,970	1,200	1,100	4,000	2,150	12,000	2,420	2,540	7,820	2,120
9	895	1,770	1,910	1,600	1,150	4,200	2,130	11,900	3,020	2,390	7,300	2,140
10	895	1,650	2,090	1,640	1,100	4,900	2,110	11,100	3,070	2,290	6,180	1,970
11	865	1,970	2,430	1,500	1,050	4,700	2,070	9,020	3,660	2,280	5,100	2,000
12	835	1,960	2,420	1,400	1,000	5,000	2,090	7,340	4,330	2,550	4,500	2,140
13	850	1,940	2,190	1,200	950	6,400	2,090	6,660	4,480	4,140	4,420	2,220
14	835	1,510	2,090	1,100	880	7,000	2,110	6,060	5,000	5,230	4,150	4,440
15	850	1,430	2,040	1,000	840	6,670	2,110	5,660	5,480	6,300	3,710	4,990
16	835	1,410	3,210	900	840	7,740	4,080	5,220	6,290	9,980	3,350	3,730
17	835	1,590	2,700	800	840	8,200	5,420	4,700	6,330	9,770	3,050	3,400
18	835	1,500	2,030	850	820	8,410	4,150	4,120	5,640	6,410	2,790	3,260
19	880	1,530	1,660	1,100	840	8,350	3,960	3,980	4,220	6,230	2,660	3,040
20	925	1,460	1,760	1,000	800	7,440	3,680	3,650	3,860	6,060	2,550	2,920
21	960	2,340	1,890	1,050	800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
22	940	2,600	1,970	950	840	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
23	920	2,700	2,050	930	800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
24	907	2,930	2,060	1,000	750	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
25	895	2,660	2,120	1,050	760	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
26	880	2,480	2,160	1,100	700	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
27	891	2,270	1,910	1,100	850	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
28	880	2,260	1,270	1,200	1,150	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
29	880	2,240	820	1,100	1,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
30	1,050	2,190	1,020	1,000	------	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
31	1,150	------	1,110	950	------	[illegible]	------	[illegible]	------	[illegible]	[illegible]	------
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFSM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
IN.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1971 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]
WTR YR 1972 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN 700 CFSM [illegible] IN [illegible] AC-FT [illegible]

PEAK DISCHARGE (BASE, 12,000 CFS).--May 8 ([illegible]) 12,400 cfs (6.36 ft).

05464640 PRAIRIE CREEK AT FAIRFAX, IOWA

LOCATION.--Lat 41°55'22", long 91°47'02", in SE1/4 SW1/4 sec.9, T.82 N., R.8 W., Linn County, on right bank 12 ft upstream from bridge on State Highway 149 at west side of Fairfax, and 10.7 miles upstream from mouth.
DRAINAGE AREA.--178 sq mi.
PERIOD OF RECORD.--October 1966 to current year.
GAGE.--Water-stage recorder. Datum of gage is 737.00 ft above mean sea level.
AVERAGE DISCHARGE.--6 years, 114 cfs (8.70 inches per year, 82,590 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, about 1,800 cfs Feb. 29 (gage height, 8.63 ft, backwater from ice); minimum daily discharge, 6.9 cfs Oct. 26.
Period of record: Maximum discharge, 5,640 cfs Mar. 3, 1970 (gage height, 13.14 ft); minimum daily, 3.7 cfs Dec. 26, 1966, Jan. 19, 1967.
An outstanding flood occurred in June 1944 (stage and discharge unknown).
REMARKS.--Records good except those for winter period, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 4 to Nov. 1; stage-discharge relation affected by ice Dec. 18 to Mar. 8).

2.3	3.8	3.0	76
2.4	8.0	4.0	280
2.5	4	5.0	540
2.6	2	7.0	1,260
2.8	5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	16	8.5	27	18	950	90	438	91	68	139	407
2	7.5	67	11	26	18	150	85	407	87	64	830	286
3	8.7	38	9.6	26	17	130	82	312	83	56	516	174
4	7.5	21	12	25	16	120	73	259	76	53	306	136
5	7.6	17	14	24	15	110	74	224	77	51	237	116
6	7.5	16	14	23	15	100	70	225	93	49	1,010	101
7	7.5	18	14	22	15	150	68	500	81	56	589	95
8	8.5	12	17	23	15	110	60	923	121	52	434	90
9	8.8	14	18	25	15	98	66	613	190	51	390	76
10	8.9	14	21	24	15	80	63	446	137	47	291	73
11	8.9	13	33	23	16	70	56	358	113	43	248	109
12	8.5	12	30	22	17	93	54	306	113	45	222	131
13	8.5	12	18	20	17	179	57	286	184	116	207	134
14	8.8	12	22	18	17	157	50	270	442	101	180	114
15	9.1	12	192	16	15	129	52	254	312	82	152	94
16	9.1	12	223	17	16	130	257	228	218	58	135	85
17	9.1	11	109	18	16	135	476	207	176	58	121	76
18	9.6	13	80	19	15	140	286	189	155	214	106	66
19	12	13	70	20	15	135	216	174	144	169	93	60
20	15	12	60	21	15	130	203	163	143	119	83	56
21	11	11	56	21	16	125	374	153	122	88	78	73
22	9.0	11	50	21	16	120	598	141	109	68	73	65
23	7.6	11	45	20	16	110	375	132	97	73	69	62
24	7.3	11	40	20	16	100	282	139	88	73	70	56
25	7.0	12	38	19	15	90	232	128	82	95	85	50
26	6.9	13	35	18	16	80	200	116	75	377	86	46
27	7.3	14	33	15	17	71	175	109	70	479	77	48
28	8.7	13	31	15	250	82	172	105	86	223	67	52
29	8.6	12	30	14	1,000	90	223	111	109	150	61	58
30	10	13	29	16	------	92	207	113	79	123	56	55
31	11	------	28	17	------	90	------	96	------	90	57	------
TOTAL	275.5	476	1,509.1	633	1,680	4,342	5,366	8,121	3,993	3,360	7,060	3,046
MEAN	8.89	15.9	48.7	20.4	57.9	140	179	262	133	108	228	101
MAX	15	67	223	27	1,000	950	598	923	442	479	1,010	407
MIN	6.9	11	8.5	14	15	70	50	96	70	43	56	46
CFSM	.05	.09	.27	.11	.33	.79	1.01	1.47	.74	.61	1.28	.57
IN.	.06	.10	.32	.13	.35	.91	1.12	1.70	.83	.70	1.48	.64
AC-FT	546	944	2,990	1,260	3,330	8,610	10,640	16,110	7,920	6,660	14,020	6,040

CAL YR 1971 TOTAL 30,738.5 MEAN 84.2 MAX 2,900 MIN 6.4 CFSM .47 IN 6.42 AC-FT 60,970
WTR YR 1972 TOTAL 39,861.6 MEAN 109 MAX 1,010 MIN 6.9 CFSM .61 IN 8.30 AC-FT 79,070

PEAK DISCHARGE (BASE, 1,200 CFS).--Feb. 29 ([illegible]) about 1,800 (8.63 ft).

05465000 CEDAR RIVER NEAR CONESVILLE, IOWA

LOCATION.--Lat 41°24'36", long 91°17'06", in SW1/4 SW1/4 sec.2, T.76 N., R.4 W., Muscatine County, on right bank 10 ft downstream from bridge on county highway G28, 3.4 miles northeast of Conesville, 5.2 miles downstream from Wapsinonoc Creek, 10.7 miles upstream from mouth, and at mile 39.8 upstream from mouth of Iowa River.
DRAINAGE AREA.--7,785 sq mi.
PERIOD OF RECORD.--September 1939 to current year.
GAGE.--Water-stage recorder. Datum of gage is 581.95 ft above mean sea level. Prior to Feb. 2, 1940, and Apr. 11, 1952, to July 1, 1954, nonrecording gage, Feb. 2, 1940, to Apr. 10, 1952, and July 2, 1954, to Sept. 16, 1963, water-stage recorder, at site 150 ft downstream on left bank at same datum.
AVERAGE DISCHARGE.--33 years, 4,164 cfs (7.26 inches per year, 3,017,000 acre-ft per year); median of yearly mean discharges, 3,710 cfs (6.5 inches per year, 2,690,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 20,400 cfs July 18 (gage height, 12.87 ft); minimum daily, 932 cfs Oct. 18.

Period of record: Maximum discharge, 70,800 cfs Apr. 2, 1961 (gage height, 16.62 ft); maximum gage height, 16.85 ft Apr. 12, 1965; minimum daily discharge, 250 cfs Nov. 28, 1955, result of freezeup.

Flood in March 1929 reached a stage of 15.8 ft, from information by local residents to Corps of Engineers.
REMARKS.--Records good except those for winter period, which are poor.
COOPERATION.--Seven discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1708: 1956.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 21-30, Dec. 7-15, 17-29, July 7-14; stage-discharge relation affected by ice Dec. 30 to Feb. 28).

Oct. 1 to Mar. 15 (1455)				Mar. 15 (1500) to Sept. 30			
4.1	885	6.5	3,560	6.0	2,670	11.0	12,800
4.3	1,080	8.0	5,900	7.0	4,070	12.0	16,200
4.6	1,380	10.0	10,100	9.0	7,600		
5.0	1,810	11.0	12,800				
5.5	2,360						

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,110	1,800	2,350	2,000	1,150	11,800	4,120	7,570	3,840	3,370	3,570	2,900
2	1,100	2,360	2,260	1,800	1,200	8,380	4,050	7,660	3,850	3,220	5,560	3,330
3	1,100	3,190	2,160	1,800	1,150	6,160	3,940	7,160	4,050	3,220	10,900	4,020
4	1,090	2,710	2,110	1,600	1,100	5,850	3,850	6,970	4,150	3,270	10,000	3,390
5	1,070	2,520	2,080	1,300	1,100	5,110	3,720	6,890	4,070	3,940	7,710	3,050
6	1,050	2,480	2,070	1,400	1,100	4,960	3,590	7,110	4,410	4,290	9,690	2,830
7	1,030	2,450	2,080	1,500	1,150	4,470	3,510	8,060	3,990	4,020	11,700	2,730
8	1,020	2,250	2,110	1,700	1,150	4,300	3,370	12,500	4,020	3,680	12,400	2,760
9	1,040	2,120	2,120	1,900	1,150	4,700	3,250	16,200	4,250	3,420	10,700	3,010
10	1,050	2,030	2,140	2,300	1,200	5,280	3,170	16,100	4,210	3,220	9,060	2,940
11	1,020	1,930	2,290	2,200	1,200	5,280	3,100	14,200	4,170	3,080	7,840	2,830
12	1,010	1,820	2,520	1,900	1,200	5,570	3,070	12,000	4,350	3,020	6,750	2,770
13	980	1,740	2,600	1,500	1,200	7,570	3,050	10,000	4,930	3,120	6,260	2,840
14	961	1,710	2,480	1,300	1,200	8,290	3,030	9,120	5,560	4,080	5,860	2,970
15	952	1,690	4,680	1,400	1,200	10,600	3,030	8,890	6,390	6,560	5,420	3,490
16	942	1,640	11,200	1,600	1,200	10,900	4,030	7,880	6,430	7,290	4,950	5,070
17	942	1,570	6,710	1,700	1,200	9,150	10,400	7,120	6,710	6,440	4,560	4,450
18	932	1,610	4,660	1,800	1,150	8,850	10,200	6,560	6,740	14,100	4,200	4,050
19	1,020	1,720	3,660	1,700	1,150	8,700	7,210	5,980	6,510	12,800	3,910	3,840
20	1,140	1,640	3,090	1,600	1,200	8,680	6,140	5,640	5,770	7,360	3,640	3,660
21	1,210	1,700	2,070	1,500	1,200	8,020	6,260	5,350	5,120	6,340	3,540	3,490
22	1,220	1,980	2,790	1,400	1,100	7,310	10,300	5,040	4,680	5,990	3,400	3,200
23	1,170	2,390	2,710	1,300	1,150	6,910	10,200	4,780	4,620	5,680	3,230	3,080
24	1,140	2,630	2,690	1,200	1,200	6,480	7,730	4,560	4,420	5,430	3,120	2,950
25	1,110	2,620	2,880	1,200	1,250	5,890	6,620	4,370	4,110	4,840	3,080	2,850
26	1,080	2,920	2,600	1,200	1,300	5,370	6,150	4,230	3,860	4,440	3,280	2,830
27	1,070	2,560	2,820	1,200	1,350	4,850	5,880	4,120	3,630	5,160	3,360	2,850
28	1,070	2,490	2,600	1,100	1,800	4,570	5,640	3,860	3,530	5,690	3,170	2,900
29	1,060	2,390	2,300	1,000	8,450	4,430	5,430	3,910	3,490	4,530	3,000	4,140
30	1,150	2,420	2,200	1,050	------	4,320	5,300	4,090	3,450	3,950	3,000	7,330
31	1,360	------	2,400	1,100	------	4,260	------	4,030	------	3,670	2,930	------
TOTAL	33,199	64,680	94,270	47,290	42,150	206,590	159,420	231,910	139,310	159,180	179,870	102,590
MEAN	1,071	2,156	3,041	1,526	1,453	6,664	5,314	7,481	4,644	5,135	5,802	3,420
MAX	1,360	3,190	11,200	2,300	8,450	11,800	10,400	16,200	6,740	14,100	12,400	7,330
MIN	932	1,570	2,070	1,000	1,100	4,260	3,030	3,860	3,450	3,020	2,930	2,730
CFSM	.14	.28	.39	.20	.19	.86	.68	.96	.60	.66	.75	.44
IN.	.16	.31	.45	.23	.20	.99	.76	1.11	.67	.76	.86	.49
AC-FT	65,850	128,300	187,000	93,800	83,600	409,800	316,200	460,000	276,300	315,700	356,800	203,500

CAL YR 1971 TOTAL 1,796,531 MEAN 4,922 MAX 29,400 MIN 932 CFSM .63 IN 8.58 AC-FT 3,563,000
WTR YR 1972 TOTAL 1,460,459 MEAN 3,990 MAX 16,200 MIN 932 CFSM .51 IN 6.98 AC-FT 2,897,000

PEAK DISCHARGE (BASE, 12,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
12-16	[illegible]	[illegible]	[illegible]	7-18	[illegible]	12.87	20,400
3-1	[illegible]	[illegible]	[illegible]	8-8	[illegible]	[illegible]	[illegible]
5-9	[illegible]	[illegible]	[illegible]				

05465500 IOWA RIVER AT WAPELLO, IOWA

LOCATION.--Lat 41°10'48", long 91°10'57", in NW1/4 SE1/4 sec.27, T.74 N., R.3 W., Louisa County, on right bank 30 ft downstream from bridge on State Highway 99 at east edge of Wapello, 13.0 miles downstream from Cedar River, and at mile 16.0.

DRAINAGE AREA.--12,499 sq mi.

PERIOD OF RECORD.--October 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 548.98 ft above mean sea level, adjustment of 1912. Prior to Apr. 16, 1934, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--58 years, 6,370 cfs (6.92 inches per year, 4,615,000 acre-ft per year); median of yearly mean discharges, 6,070 cfs (6.6 inches per year, 4,400,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 24,500 cfs Aug. 8 (gage height, 9.37 ft); minimum daily, 1,400 cfs Oct. 11, 12.

Period of record: Maximum discharge, 94,000 cfs June 18, 1947 (gage height, 16.14 ft); maximum gage height, 17.40 ft July 15, 1969; minimum daily discharge, 300 cfs Nov. 28, 1955, result of freezeup.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Coralville Reservoir since Sept. 17, 1958 (see sta. 05453510). Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Six discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1308: 1917, 1923-30, 1932. WSP 1438: Drainage area. WSP 1558: 1918, 1923-25 (M), 1929. WSP 1708: 1956.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,480	1,830	3,160	4,550	1,700	17,000	6,530	12,900	7,110	8,390	9,120	7,390
2	1,470	2,300	3,090	3,920	2,100	18,200	6,490	15,400	6,570	8,160	9,500	7,390
3	1,470	5,120	2,990	3,400	3,100	12,300	6,410	14,100	6,590	8,010	16,100	8,580
4	1,470	4,240	2,890	3,000	3,000	10,700	6,310	12,400	6,670	7,970	16,600	8,240
5	1,450	3,380	2,850	2,000	2,900	9,600	6,170	11,500	6,550	8,160	13,800	7,620
6	1,430	3,030	2,790	2,300	2,800	9,280	5,950	11,500	7,940	8,810	18,900	7,300
7	1,420	2,910	2,810	3,100	2,700	9,120	5,860	12,400	7,430	8,740	23,100	7,070
8	1,410	2,780	2,920	3,700	2,600	8,660	5,590	20,700	6,690	8,410	24,300	6,760
9	1,410	2,610	3,020	4,300	2,500	8,770	5,350	24,000	8,600	8,090	23,100	6,370
10	1,420	2,520	3,120	4,600	2,550	8,400	5,140	23,900	9,510	7,900	19,900	6,020
11	1,400	2,420	3,430	4,200	2,600	8,000	5,130	22,200	9,050	7,750	13,700	6,550
12	1,400	2,350	3,830	3,800	2,600	8,770	4,940	18,700	8,800	7,630	12,600	7,520
13	1,430	2,300	3,910	3,100	2,500	10,800	4,850	16,700	9,300	7,610	12,500	7,260
14	1,420	2,250	3,730	2,500	2,500	14,600	4,870	15,500	11,000	7,760	11,500	7,380
15	1,410	2,200	7,830	2,700	2,500	16,300	5,010	15,300	13,300	9,310	11,200	7,070
16	1,410	2,200	20,500	2,800	2,400	17,500	5,850	14,200	13,900	11,400	10,500	7,820
17	1,420	2,180	19,800	2,700	2,400	16,200	14,800	13,000	12,700	11,000	10,000	7,710
18	1,410	2,160	11,400	2,900	2,400	13,900	17,800	12,200	12,100	14,600	9,450	7,010
19	1,430	2,200	8,340	2,400	2,400	12,600	13,900	11,900	12,000	21,000	8,950	6,550
20	1,490	2,240	7,170	2,300	2,400	12,500	11,600	10,700	12,100	14,200	8,610	6,110
21	1,580	2,210	6,090	2,100	2,300	11,700	12,600	9,840	12,200	13,300	8,350	5,740
22	1,610	2,420	4,770	2,000	2,200	10,400	19,400	9,390	10,700	12,000	8,120	5,520
23	1,590	2,710	4,450	1,900	2,250	9,870	21,600	8,750	9,990	11,500	7,900	5,310
24	1,540	3,060	4,310	1,800	2,300	9,510	18,500	7,810	9,660	11,200	7,740	5,020
25	1,520	3,190	4,350	1,700	2,400	8,960	13,900	7,600	9,190	10,800	7,740	4,860
26	1,500	3,200	4,320	1,600	2,500	8,470	12,600	7,330	8,880	10,300	8,340	4,780
27	1,470	3,180	4,310	1,500	2,600	7,980	11,800	7,090	8,650	10,500	8,230	4,760
28	1,460	3,260	4,150	1,600	3,500	7,500	10,900	6,790	8,500	12,500	7,970	4,800
29	1,460	3,200	3,840	1,700	8,500	7,390	9,430	7,030	8,600	10,900	7,750	5,020
30	1,500	3,100	4,000	1,700	-------	7,230	9,410	7,790	8,540	10,000	7,520	7,200
31	1,690	-------	5,350	1,700	-------	6,950	-------	7,540	-------	9,430	7,410	-------
TOTAL	45,570	82,830	169,520	83,170	79,200	339,160	288,290	395,760	282,900	317,330	370,500	196,730
MEAN	1,470	2,761	5,468	2,683	2,731	10,940	9,610	12,770	9,430	10,240	11,950	6,558
MAX	1,690	5,120	20,500	4,600	8,500	18,200	21,600	24,000	13,900	21,000	24,300	8,580
MIN	1,400	1,830	2,790	1,500	1,700	6,950	4,850	6,790	6,550	7,610	7,410	4,760
AC-FT	90,390	164,300	336,200	165,000	157,100	672,700	571,800	785,000	561,100	629,400	734,900	390,200

CAL YR 1971 TOTAL 2,732,780 MEAN 7,487 MAX 56,200 MIN 1,400 AC-FT 5,420,000
WTR YR 1972 TOTAL 2,650,960 MEAN 7,243 MAX 24,300 MIN 1,400 AC-FT 5,258,000

05470000 SOUTH SKUNK RIVER NEAR AMES, IOWA

LOCATION.--Lat 42°04'05", long 93°37'02", in NW1/4 SW1/4 sec.23, T.84 N., R.24 W., Story County, on left bank 2.5 miles north of Ames, 3.5 miles downstream from Keigley Branch, 5.2 miles upstream from Squaw Creek, and at mile 228.1 upstream from mouth of Skunk River.

DRAINAGE AREA.--315 sq mi.

PERIOD OF RECORD.--July 1920 to September 1927, October 1932 to current year. Monthly discharge only for some periods, published in WSP 1308. Prior to October 1966, published as Skunk River near Ames.

GAGE.--Water-stage recorder. Concrete control since July 21, 1934. Datum of gage is 893.61 ft above mean sea level (Iowa Highway Commission bench mark). Prior to Aug. 25, 1921, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--47 years, 135 cfs (5.82 inches per year, 97,810 acre-ft per year); median of yearly mean discharges, 110 cfs (4.7 inches per year, 79,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,030 cfs Aug. 7 (gage height, 6.92 ft); maximum gage height, 8.93 ft Mar. 7 (backwater from ice); minimum daily discharge, 1.0 cfs Oct. 7.

Period of record: Maximum discharge, 8,630 cfs June 10, 1954 (gage height, 13.66 ft); maximum gage height, 13.90 ft May 20, 1944; no flow at times in 1934, 1937, 1953-57.

REMARKS.--Records good except those for winter period, which are poor. Several diversions for irrigation above station. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1308: 1921, 1925-26, 1934-35 (M), 1937 (M), 1939 (M), 1947-50 (M), WRD Iowa. 1967: 1965.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 2, 6, 14-22; stage-discharge relation affected by ice Dec. 11-13, 15-17, 21, 22, Jan. 5 to Mar. 11).

1.76	1.0	2.7	85
1.8	1.5	3.0	158
1.9	3.3	3.5	335
2.0	6.4	4.0	575
2.2	17	5.0	1,290
2.4	36	7.0	3,090

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	31	9.0	7.3	4.1	310	54	118	143	113	105	64
2	1.5	55	11	7.2	4.1	250	49	157	121	113	1,350	61
3	1.2	49	11	6.9	4.1	204	47	156	105	99	1,300	58
4	1.1	30	11	6.3	4.0	150	44	136	94	90	613	54
5	1.1	20	11	5.0	3.9	88	44	120	433	81	418	50
6	1.2	13	13	4.0	3.7	252	46	205	1,530	75	1,720	47
7	1.0	9.4	14	3.6	3.6	1,010	46	774	888	76	2,830	256
8	1.2	8.1	14	4.0	3.5	930	38	558	517	71	2,500	198
9	1.6	8.8	13	4.5	3.4	840	36	395	463	90	2,110	136
10	1.6	9.8	16	5.0	3.4	770	36	301	321	145	1,250	137
11	1.5	9.6	16	5.7	3.4	710	34	244	290	104	831	357
12	1.5	8.9	11	6.6	3.4	455	33	208	210	95	591	400
13	1.6	3.3	12	6.0	3.4	340	33	190	410	106	448	417
14	1.8	7.4	14	6.8	3.5	295	33	178	930	97	347	390
15	1.9	6.8	16	4.1	3.5	353	31	169	1,220	164	267	292
16	1.9	7.1	16	3.0	3.5	287	64	145	640	140	210	232
17	1.9	9.9	11	2.6	3.5	222	109	130	443	122	185	193
18	2.4	10	13	3.1	3.6	175	99	118	353	331	165	160
19	3.3	22	13	3.4	3.6	144	82	107	300	277	135	135
20	3.0	23	12	3.4	3.6	110	70	98	272	196	117	127
21	3.0	17	10	3.5	3.7	110	72	93	290	149	109	171
22	2.5	13	10	3.7	3.7	92	73	88	225	117	97	177
23	2.0	11	11	3.9	3.8	79	71	85	197	95	93	156
24	4.4	12	12	4.2	3.9	64	62	92	170	88	85	142
25	7.3	13	12	4.7	4.3	90	55	83	159	69	113	131
26	8.9	13	11	5.8	4.8	53	50	82	153	81	153	376
27	13	14	9.0	5.6	5.3	57	47	114	137	79	122	725
28	15	13	7.9	4.9	5.7	66	61	135	130	68	104	668
29	13	16	7.2	4.5	6.0	69	83	217	147	61	90	859
30	21	12	7.0	4.4	------	65	107	290	130	53	77	851
31	29	------	7.0	4.2	------	61	------	180	------	66	70	------
TOTAL	150.2	487.1	361.1	147.7	114.0	8,676	1,709	5,931	11,340	3,483	18,609	7,796
MEAN	4.85	16.2	11.6	4.76	3.93	280	57.0	191	378	112	600	260
MAX	29	55	16	7.3	6.0	1,010	109	774	1,530	331	2,830	859
MIN	1.0	6.8	7.0	2.6	3.4	53	31	82	94	66	70	47
CFSM	.02	.05	.04	.02	.01	.89	.18	.61	1.20	.36	1.90	.83
IN.	.02	.06	.04	.02	.01	1.02	.20	.70	1.34	.41	2.20	.92
AC-FT	298	966	716	293	226	17,200	3,390	11,760	22,490	6,910	36,900	15,460

CAL YR 1971 TOTAL 44,106.6 MEAN 121 MAX 3,150 MIN 1.0 CFSM .38 IN 5.20 AC-FT 87,480
WTR YR 1972 TOTAL 58,887.1 MEAN 161 MAX 2,830 MIN 1.0 CFSM .51 IN 6.96 AC-FT 116,800

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
6-6	1000	5.74	1,870	8-7	1700	6.92	3,030
8-2	0330	5.60	1,670				

05470500 SQUAW CREEK AT AMES, IOWA

LOCATION.--Lat 42°01'21", long 93°37'45", in NE1/4 NW1/4 sec.10, T.83 N., R.24 W., Story County, on left bank 65 ft downstream from Lincoln Way Bridge in Ames, 0.1 mile downstream from College Creek, and 1.8 miles upstream from mouth.

DRAINAGE AREA.--204 sq mi.

PERIOD OF RECORD.--May 1919 to April 1927, May 1965 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 881.00 ft above mean sea level (levels by Iowa State University). Prior to Mar. 11, 1925, nonrecording gage at site 0.6 mile upstream at different datum. Mar. 11, 1925 to Apr. 30, 1927, nonrecording gage at site 65 ft upstream at datum about 4 ft higher.

AVERAGE DISCHARGE.--15 years, 90.8 cfs (6.04 inches per year, 65,780 acre-ft per year); median of yearly mean discharges, 76 cfs (5.1 inches per year, 55,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,680 cfs Aug. 2 (gage height, 5.84 ft); no flow on many days.

Period of record: Maximum discharge, 4,130 cfs July 17, 1922 (gage height, 10.7 ft, site and datum then in use, from graph based on gage readings); maximum gage height, 10.74 ft May 13, 1970; no flow at times most years.

Flood of June 4, 1918, reached a stage of 14.5 ft, from flood marks, site and datum used 1919-25 (discharge, 6,900 cfs). Flood of Mar. 1, 1965, reached a stage of 10.7 ft, from graph based on gage readings, at present site and datum (discharge, 4, 200 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1308: Drainage area, 1920-22 (M), 1923, 1924-25 (M), 1926, 1927 (M), WRD Iowa. 1966: 1965, WRD Iowa. 1971: 1970 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Nov. 27, Dec. 5-9, 13, 14, Dec. 17 to Jan. 8, Jan. 15 to Feb. 11; stage-discharge relation affected by ice Nov. 28 to Dec. 4, Dec. 10-12, 15, 16, Jan. 9-14, Feb. 12 to Mar. 1, Mar. 4-6).

1.55	14	2.3	174
1.6	19	3.0	540
1.7	30	4.0	1,000
1.9	62	6.0	1,735
2.1	108		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	58	1.0	1.8	0	465	26	83	89	56	149	23
2	4.5	27	2.0	1.3	.07	68	22	105	76	56	1,460	22
3	.90	11	3.2	1.1	0	59	21	99	68	45	658	21
4	0	4.0	2.7	0	0	45	19	80	62	42	296	20
5	0	2.2	4.0	0	0	34	19	75	337	40	243	19
6	.07	.70	5.0	0	0	270	18	120	494	38	1,130	18
7	0	0	5.5	0	0	980	19	312	270	38	860	17
8	0	0	6.6	1.5	0	268	17	282	196	33	613	66
9	0	.50	2.6	1.5	0	194	14	204	161	33	546	53
10	0	.50	9.0	2.3	0	143	19	147	128	31	370	52
11	0	.70	3.0	2.2	.70	190	18	123	110	30	257	132
12	0	.50	1.6	3.5	.60	204	14	106	112	31	214	196
13	0	0	1.9	3.0	.76	155	15	105	277	28	178	236
14	.07	0	2.5	2.0	1.3	126	14	101	567	41	152	197
15	.07	0	6.0	.90	.80	132	14	94	583	37	126	148
16	.13	1.1	1.4	.13	.60	105	51	82	347	24	103	119
17	.07	1.7	.70	0	2.0	80	40	74	259	53	86	100
18	1.1	2.2	.90	.50	1.0	68	39	70	209	80	71	85
19	1.5	1.3	1.4	0	1.0	56	36	63	184	72	75	76
20	9.9	1.1	1.2	0	2.6	49	32	57	166	58	66	75
21	.70	.07	1.1	0	2.9	44	42	54	146	42	60	69
22	.07	0	1.1	0	1.8	40	35	52	128	34	52	64
23	.07	.90	2.2	0	9.5	34	32	59	112	30	46	62
24	.13	1.3	3.8	0	7.0	31	27	58	102	31	42	60
25	.70	1.8	4.9	0	4.6	28	24	54	95	19	53	69
26	1.3	2.6	5.2	0	2.5	26	24	56	88	85	39	298
27	21	2.6	3.0	0	7.0	33	25	97	81	39	34	535
28	1.2	1.9	1.6	0	20	31	53	100	81	30	29	339
29	13	2.6	3.4	0	70	31	63	101	69	25	27	361
30	44	3.0	2.1	0	------	31	80	139	60	21	26	260
31	19	------	1.6	0	------	29	------	109	------	16	29	------
TOTAL	121.68	129.27	92.20	21.73	136.73	4,049	872	3,261	5,657	1,238	8,090	3,792
MEAN	3.93	4.31	2.97	.70	4.71	131	29.1	105	189	39.9	261	126
MAX	44	58	9.0	3.5	70	980	80	312	583	85	1,460	535
MIN	0	0	.70	0	0	26	14	52	60	16	26	17
CFSM	.02	.02	.01	.003	.02	.64	.14	.51	.93	.20	1.28	.62
IN.	.02	.02	.02	.003	.02	.74	.16	.59	1.03	.23	1.47	.69
AC-FT	241	256	183	43	271	8,030	1,730	6,470	11,220	2,460	16,040	7,520

CAL YR 1971 TOTAL 29,219.08 MEAN 80.1 MAX 1,810 MIN 0 CFSM .39 IN 5.33 AC-FT 57,960
WTR YR 1972 TOTAL 27,460.61 MEAN 75.0 MAX 1,460 MIN 0 CFSM .37 IN 5.01 AC-FT 54,470

PEAK DISCHARGE (BASE, 1,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-7	--	--	* 1,300	8-2	1200	5.84	1,680
8-6	--	--	* 1,180				

* About

05471000 SOUTH SKUNK RIVER BELOW SQUAW CREEK NEAR AMES, IOWA

LOCATION.--Lat 42°00'31", long 93°35'37", in NE1/4 NW1/4 sec.13, T.83 N., R.24 W., Story County, on right bank 15 ft downstream from bridge on county highway, 0.2 mile downstream from Squaw Creek, 0.2 mile upstream from bridge on U.S. Highway 30, 2 miles southeast of Ames, and at mile 222.6 upstream from mouth of Skunk River.

DRAINAGE AREA.--556 sq mi.

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1966, published as Skunk River below Squaw Creek near Ames.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 867.10 ft above mean sea level.

AVERAGE DISCHARGE.--20 years, 242 cfs (5.91 inches per year, 175,300 acre-ft per year); median of yearly mean discharges, 220 cfs (5.4 inches per year, 159,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,340 cfs Aug. 2 (gage height, 8.05 ft); minimum daily, 0.10 cfs Jan. 24 to Feb. 5.

Period of record: Maximum discharge, 9,260 cfs Mar. 30, 1960 (gage height, 13.20 ft); no flow at times most years.

Flood of May 19, 1944, reached a stage of 13 ft, from floodmarks (discharge, 10,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report. Low flows are affected by pumpage by City of Ames from surficial aquifer and do not represent the natural flow of the stream.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 2, 27-31, Jan. 4 to Mar. 8).

-.39	.10	1.0	130
-.3	.11	2.0	375
-.2	.57	4.0	1,050
-.1	2.2	6.0	1,980
0	5.1	8.0	3,300
.5	45		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	83	4.8	6.4	.10	400	72	174	255	174	275	101
2	1.1	73	8.2	6.4	.10	280	64	228	224	171	2,690	94
3	.91	55	7.8	6.4	.10	260	61	243	200	146	2,110	86
4	.78	37	9.4	6.2	.10	244	54	220	179	131	1,070	79
5	.91	23	11	4.4	.10	232	52	206	604	120	813	73
6	1.1	11	13	2.7	.11	340	54	302	1,920	113	2,410	67
7	1.1	5.5	14	1.7	.12	450	50	978	1,240	108	3,080	310
8	1.2	8.8	15	1.3	.12	310	43	834	798	99	3,160	306
9	.78	8.8	11	1.2	.22	378	40	615	714	100	2,750	213
10	.67	8.8	29	1.3	.35	408	38	495	534	153	1,720	221
11	.67	8.8	16	1.3	.35	510	37	409	421	120	1,240	472
12	.57	7.8	7.8	1.5	.35	633	32	350	381	111	949	616
13	.67	7.3	8.8	2.2	.35	528	32	334	764	116	749	66C
14	.78	6.0	11	2.7	.37	441	33	310	1,460	131	616	621
15	.78	5.1	23	3.0	.45	501	30	291	1,900	168	512	494
16	.78	5.1	16	3.3	.45	417	105	262	1,090	152	432	409
17	.78	14	16	2.7	.40	330	122	238	786	178	367	345
18	.67	23	17	.64	.40	278	117	216	636	342	309	295
19	.57	24	11	.24	.66	245	98	196	568	337	264	253
20	.91	26	9.4	.21	.68	215	80	179	504	254	228	237
21	1.2	21	7.8	.17	.84	186	98	167	438	200	211	264
22	.91	15	6.9	.14	.70	153	82	154	382	161	181	275
23	.91	14	7.3	.12	.83	124	78	150	339	135	168	248
24	.57	13	7.3	.10	4.5	103	66	157	298	119	156	235
25	.57	11	7.8	.10	4.1	92	57	141	269	97	214	224
26	.49	14	6.0	.10	2.6	82	49	144	254	246	219	633
27	6.9	11	9.4	.10	3.9	92	46	210	229	142	185	1,330
28	6.0	10	6.0	.10	35	92	87	232	220	116	159	855
29	14	16	9.0	.10	380	94	115	311	224	100	140	1,340
30	57	12	7.0	.10	------	88	149	410	194	88	124	1,130
31	29	------	6.6	.10	------	82	------	303	------	75	111	------
TOTAL	134.68	578.0	332.3	57.02	437.95	8,588	2,041	9,459	18,025	4,703	27,612	12,486
MEAN	4.34	19.3	10.7	1.84	15.1	277	68.0	305	601	152	891	416
MAX	57	83	29	6.4	380	633	149	978	1,920	342	3,160	1,340
MIN	.49	5.1	4.8	.10	.10	82	30	141	179	75	111	67
CFSM	.008	.03	.02	.003	.03	.50	.12	.55	1.08	.27	1.60	.75
IN.	.009	.04	.02	.003	.03	.57	.14	.63	1.21	.31	1.85	.84
AC-FT	267	1,150	659	113	869	17,030	4,050	18,760	35,750	9,330	54,770	24,770

CAL YR 1971 TOTAL 181,736.70 MEAN 498 MAX 7,000 MIN .49 CFSM .90 IN 12.16 AC-FT 360,500
WTR YR 1972 TOTAL 84,453.95 MEAN 231 MAX 3,160 MIN .10 CFSM .42 IN 5.65 AC-FT 167,500

PEAK DISCHARGE (BASE, 2,500 CFS).--Aug. 2 (0800) 3,340 cfs (8.05 ft); Aug. 8 (time unknown) about 3,300 cfs.

05471200 INDIAN CREEK NEAR MINGO, IOWA

LOCATION.--Lat 41°48'17", long 93°18'26", in NW1/4 NW1/4 sec.28, T.81 N., R.21 W., Jasper County, on right bank 30 ft downstream from bridge on State Highway 117, 0.7 mile downstream from Wolf Creek, 2.9 miles northwest of Mingo, and 3.3 miles upstream from Clear Creek.
DRAINAGE AREA.--276 sq mi.
PERIOD OF RECORD.--May 1958 to current year.
GAGE.--Water-stage recorder. Datum of gage is 810.47 ft above mean sea level.
AVERAGE DISCHARGE.--14 years, 150 cfs (7.38 inches per year, 108,700 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 4,150 cfs June 14 (gage height, 13.78 ft); minimum daily, 0.80 cfs Oct. 13-19.
Period of record: Maximum discharge, 7,380 cfs June 12, 1966 (gage height, 16.41 ft); minimum daily, 0.14 cfs Jan. 11, 12, 1968.
Flood of May 20, 1944, reached a stage of 21.4 ft, from information by local residents (discharge not determined).
REMARKS.--Records good except those for winter period, which are poor.
REVISIONS (WATER YEARS).--WSP 1728: 1958 (M), 1959 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Mar. 12 to May 5, June 13 to July 6, July 26-28, Aug. 3-11, Sept. 17-30; stage-discharge relation affected by ice Dec. 16 to Mar. 6).

3.9	.72	4.4	15	9.0	1,030
4.0	1.8	4.7	40	11.0	1,670
4.1	3.5	5.0	78	13.0	2,900
4.2	6.1	5.5	166	14.0	4,100
4.3	9.8	6.0	276		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	20	8.5	11	3.6	800	40	87	99	173	255	68
2	1.3	70	8.4	10	3.5	170	37	90	86	150	746	62
3	.90	35	7.7	9.0	2.9	150	33	83	74	124	865	56
4	.90	20	8.5	8.0	2.6	140	30	73	65	105	602	53
5	.90	15	8.5	7.0	2.5	150	28	70	153	94	487	50
6	.89	10	8.9	8.0	2.4	180	28	143	467	88	1,320	46
7	.88	8.0	8.9	10	2.4	584	29	396	336	81	1,260	52
8	.87	6.4	9.5	12	2.3	375	28	470	260	72	1,030	111
9	.86	7.8	10	12	2.2	205	24	355	213	65	1,030	85
10	.85	9.5	14	11	2.4	164	22	283	172	73	742	103
11	.84	7.8	14	10	3.0	178	21	230	143	71	599	163
12	.82	6.7	17	9.0	3.2	219	21	200	157	64	497	341
13	.80	6.2	18	8.0	3.5	195	21	195	1,510	144	433	388
14	.80	6.1	15	7.0	3.3	118	19	179	3,770	109	366	329
15	.80	5.7	19	6.0	3.1	137	19	154	2,430	220	310	263
16	.80	6.1	16	8.0	3.2	108	45	138	1,160	114	261	217
17	.80	12	15	10	3.5	91	70	126	799	121	225	181
18	.80	8.9	14	9.0	3.3	69	64	115	635	231	190	147
19	.80	7.9	13	8.0	3.0	59	59	104	1,080	179	162	125
20	.90	7.0	11	7.6	3.1	55	53	98	2,080	145	147	114
21	1.0	6.4	10	7.3	3.2	57	63	89	892	119	128	108
22	1.2	6.4	10	7.0	3.2	58	71	81	644	96	111	94
23	1.3	6.4	11	6.5	3.3	54	62	74	509	82	100	89
24	1.2	6.7	11	5.5	4.0	43	54	114	419	560	92	90
25	1.0	6.7	10	4.0	3.8	41	48	113	361	239	110	85
26	.96	7.7	9.7	3.6	3.7	37	44	93	314	952	149	92
27	.97	10	9.4	3.4	4.5	41	40	131	277	737	120	111
28	1.1	10	8.8	3.2	250	51	47	182	244	451	109	181
29	1.3	10	9.4	3.4	580	53	67	145	231	335	96	149
30	2.0	9.3	10	3.5	------	48	79	119	202	255	81	129
31	5.0	------	11	3.6	------	41	------	112	------	200	72	------
TOTAL	34.41	355.7	355.2	231.6	914.7	4,671	1,266	4,842	19,782	6,449	12,703	4,082
MEAN	1.11	11.9	11.5	7.47	31.5	151	42.2	156	659	208	410	136
MAX	5.0	70	19	12	580	800	79	470	3,770	952	1,320	388
MIN	.80	5.7	7.7	3.2	2.2	37	19	70	65	64	72	46
CFSM	.004	.04	.04	.03	.11	.55	.15	.57	2.39	.75	1.49	.49
IN.	.005	.05	.05	.03	.12	.63	.17	.65	2.67	.87	1.71	.55
AC-FT	68	706	705	459	1,810	9,260	2,510	9,600	39,240	12,790	25,200	8,100

CAL YR 1971 TOTAL 53,663.10 MEAN 147 MAX 4,090 MIN .72 CFSM .53 IN 7.23 AC-FT 106,400
WTR YR 1972 TOTAL 55,686.61 MEAN 152 MAX 3,770 MIN .80 CFSM .55 IN 7.51 AC-FT 110,500

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
6-14	2200	13.78	4,150	7-26	1630	11.56	1,990
6-20	0830	12.83	2,800				

05471500 SOUTH SKUNK RIVER NEAR OSKALOOSA, IOWA

LOCATION.--Lat 41°21'19", long 92°39'31", in NW1/4 SW1/4 sec.25, T.76 N., R.16 W., Mahaska County, on right bank 400 ft upstream from bridge on U.S. Highway 63, 0.3 mile downstream from Painter Creek, 4.0 miles north of Oskaloosa, 53.7 miles upstream from confluence with North Skunk River, and at mile 147.3 upstream from mouth of Skunk River.

DRAINAGE AREA.--1,635 sq mi.

PERIOD OF RECORD.--October 1945 to current year. Prior to October 1966, published as Skunk River near Oskaloosa. Prior to October 1948, monthly discharge only, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 685.50 ft above mean sea level. Prior to Nov. 21, 1947, nonrecording gage at site 400 ft downstream at same datum.

AVERAGE DISCHARGE.--27 years, 770 cfs (6.40 inches per year, 557,900 acre-ft per year); median of yearly mean discharges, 640 cfs (5.30 inches per year, 464,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,180 cfs June 16 (gage height, 17.38 ft); minimum daily, 35 cfs Jan. 28.

Period of record: Maximum discharge, 20,000 cfs June 15, 1947 (gage height, 21.26 ft, from floodmarks); minimum daily, 1.8 cfs Oct. 11-13, 1956.

Flood in May 1944 reached a stage of 25.8 ft, from floodmarks (discharge, 37,000 cfs, from rating curve extended above 18,000 cfs on basis of velocity-area study).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used June 11-27, July 8-18, Aug. 19 to Sept. 11;
stage-discharge relation affected by ice Dec. 11-14, Dec. 18 to Mar. 11).

5.3	34	6.3	182	12.0	2,500
5.4	44	7.0	390	15.0	4,600
5.8	89	9.0	1,100	18.0	7,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	145	87	120	41	2,500	406	815	774	928	726	667
2	45	568	78	120	41	2,600	390	733	694	863	971	498
3	44	308	82	11	40	1,800	373	686	641	797	2,310	431
4	44	218	87	9	39	1,300	351	672	592	738	3,000	390
5	43	168	91	8	38	1,100	339	649	548	679	2,020	368
6	41	145	92	9	37	1,000	326	668	630	640	3,560	361
7	41	121	93	10	37	2,000	318	1,280	1,490	608	4,380	353
8	41	103	94	11	37	3,200	302	2,550	1,790	581	4,860	347
9	42	104	95	12	36	3,000	293	2,560	1,340	567	4,340	452
10	42	106	109	13	40	1,800	287	1,920	1,150	543	3,810	1,850
11	40	105	130	13	43	1,060	275	1,550	1,020	530	2,980	2,230
12	39	100	110	12	45	910	268	1,340	890	590	2,390	1,500
13	40	96	85	10	46	994	264	1,230	1,820	590	2,130	1,860
14	40	91	80	8	47	939	258	1,180	5,310	727	1,690	2,150
15	40	88	308	7	48	823	272	1,100	6,560	671	1,410	1,560
16	40	85	229	7	49	877	393	997	7,110	693	1,240	1,310
17	40	84	152	8	50	803	503	927	5,590	608	1,090	1,150
18	40	96	130	9	52	717	472	866	3,410	1,110	973	997
19	44	97	170	8	56	645	482	809	2,630	983	880	894
20	54	87	180	8	62	593	560	759	4,120	944	801	815
21	56	86	180	7	70	566	808	715	4,210	808	737	760
22	58	82	150	7	80	550	993	673	2,720	696	681	704
23	53	78	160	6	100	501	750	640	2,140	716	637	686
24	48	82	160	5	180	465	651	806	1,780	591	592	676
25	48	86	130	4	170	438	589	724	1,520	883	601	651
26	46	89	115	4	150	415	542	667	1,360	1,250	656	626
27	48	89	105	3	190	414	504	618	1,240	1,990	649	630
28	52	91	100	3	1,000	450	486	654	1,180	1,560	614	1,090
29	58	92	100	3	2,300	442	540	909	1,070	1,100	562	1,460
30	74	90	110	3	------	419	621	850	993	903	532	1,290
31	97	------	115	4	------	414	------	773	------	781	496	------
TOTAL	1,483	3,780	3,907	2,55	5,124	33,735	13,616	31,320	66,322	25,668	52,318	28,756
MEAN	47.8	126	126	82.	177	1,088	454	1,010	2,211	828	1,688	959
MAX	97	568	308	13	2,300	3,200	993	2,560	7,110	1,990	4,860	2,230
MIN	39	78	78	3	36	414	258	618	548	530	496	347
CFSM	.03	.08	.08	.0	.11	.67	.28	.62	1.35	.51	1.03	.59
IN.	.03	.09	.09	.0	.12	.77	.31	.71	1.51	.58	1.19	.65
AC-FT	2,940	7,500	7,750	5,0	10,160	66,910	27,010	62,120	131,500	50,910	103,800	57,040

CAL YR 1971 TOTAL 239,520 MEAN 656 MAX 6,600 MIN 39 CFSM .40 IN 5.45 AC-FT 475,100
WTR YR 1972 TOTAL 268,585 MEAN 734 MAX 7,110 MIN 35 CFSM .45 IN 6.11 AC-FT 532,700

PEAK DISCHARGE (BASE, 5,000 CFS).--June 16 (1315) 7,180 cfs (17.38 ft); Aug. 8 (0830) 5,150 cfs (15.69 ft).

05472500 NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA

LOCATION.--Lat 41°18'03", long 92°12'16", in NE1/4 SE1/4 sec.14, T.75 N., R.12 W., Keokuk County, on right bank 20 ft downstream from bridge on State Highway 149, 1.2 miles downstream from Cedar Creek, 2.2 miles south of Sigourney, 4.0 miles upstream from Bridge Creek, and 16.2 miles upstream from confluence with South Skunk River.

DRAINAGE AREA.--730 sq mi.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 651.53 ft above mean sea level. Prior to June 10, 1953, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--27 years, 396 cfs (7.37 inches per year, 286,900 acre-ft per year); median of yearly mean discharges, 435 cfs (8.1 inches per year, 315,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,360 cfs May 8 (gage height, 16.03 ft); minimum daily, 12 cfs Oct. 7.

Period of record: Maximum discharge, 27,500 cfs Mar. 31, 1960 (gage height, 25.33 ft); minimum daily, 0.1 cfs Oct. 7 to Nov. 15, 1956.

Flood in May 1944 reached a stage of 22.8 ft, from floodmark (discharge, 14,500 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1558: 1946-47 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-Dec. 14, Mar. 5-Aug. 15, Sept. 12-30; stage-discharge relation affected by ice Dec. 18-23, Dec. 31-Mar. 8).

3.3	12	7.0	546
3.6	33	10.0	1,270
4.0	69	15.0	2,870
5.0	192	17.0	3,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	67	44	120	21	1,500	206	1,330	416	296	288	269
2	14	312	42	100	21	1,600	198	1,410	344	262	802	1,260
3	15	461	41	80	21	1,700	192	843	298	239	993	484
4	16	211	37	60	20	1,600	185	651	263	264	577	297
5	14	94	39	45	19	550	175	555	236	210	405	241
6	13	62	44	48	19	350	168	568	231	189	1,490	211
7	12	50	47	50	19	400	164	1,320	336	175	2,730	193
8	13	44	48	52	19	900	154	3,190	327	165	2,200	178
9	13	41	50	52	19	546	144	2,790	363	158	2,520	180
10	14	38	69	50	20	297	136	2,720	496	153	2,960	262
11	16	36	84	45	20	250	133	1,520	340	146	2,420	2,320
12	15	38	90	38	21	246	131	967	274	140	814	2,390
13	15	39	99	30	23	426	129	860	471	188	694	2,850
14	15	38	77	25	24	361	127	810	2,090	355	1,430	2,970
15	15	37	1,100	23	24	304	131	777	2,440	438	925	2,080
16	15	35	831	24	25	370	826	674	2,410	322	509	908
17	14	34	395	25	35	403	1,330	577	2,700	305	417	718
18	14	36	200	28	70	313	805	505	3,030	421	373	613
19	15	35	160	27	55	262	544	449	1,230	956	325	486
20	18	36	143	26	45	234	591	404	1,360	834	287	424
21	18	46	125	26	55	225	2,100	375	1,500	492	259	532
22	19	39	129	27	70	222	2,640	350	866	332	235	415
23	22	36	115	26	65	230	1,650	328	600	263	217	366
24	25	34	109	24	200	209	929	476	504	367	208	332
25	24	32	104	21	250	188	699	614	441	362	274	316
26	20	33	102	20	230	177	574	477	399	563	419	298
27	18	39	93	19	220	174	490	356	357	1,340	344	276
28	19	41	71	18	700	177	472	313	382	1,350	253	270
29	18	46	80	19	1,300	220	562	933	421	596	209	276
30	33	47	190	19	------	234	845	1,490	365	421	186	387
31	18	------	140	20	------	220	------	612	------	336	170	------
TOTAL	524	2,137	4,886	1,187	3,630	14,888	17,430	29,204	25,426	12,638	25,933	22,802
MEAN	16.9	71.2	158	38.3	125	480	581	942	848	408	837	760
MAX	33	461	1,100	120	1,300	1,700	2,640	3,190	3,030	1,350	2,960	2,970
MIN	12	32	37	18	19	174	127	313	231	140	170	178
CFSM	.02	.10	.22	.05	.17	.66	.80	1.29	1.16	.56	1.15	1.04
IN.	.03	.11	.25	.06	.18	.76	.89	1.49	1.30	.64	1.32	1.16
AC-FT	1,040	4,240	9,690	2,350	7,200	29,530	34,570	57,930	50,430	25,070	51,440	45,230

CAL YR 1971 TOTAL 98,565 MEAN 270 MAX 6,200 MIN 12 CFSM .37 IN 5.02 AC-FT 195,500
WTR YR 1972 TOTAL 160,685 MEAN 439 MAX 3,190 MIN 12 CFSM .60 IN 8.19 AC-FT 318,700

PEAK DISCHARGE (BASE, 3,000 CFS).--No peak above base.

05473500 BIG CREEK NEAR MOUNT PLEASANT, IOWA

LOCATION.--Lat 41°00'52", long 91°34'49", in NW1/4 NW1/4 sec.29, T.72 N. R.6 W., Henry County, on left bank 12 ft downstream from bridge on county highway, 100 ft downstream from Lynn Creek, 0.7 mile downstream from Brandywine Creek, and 3.7 miles northwest of Court House at Mount Pleasant.

DRAINAGE AREA.--106 sq mi.

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 630.53 ft above mean sea level.

AVERAGE DISCHARGE.--17 years, 58.1 cfs (7.44 inches per year, 42,090 acre-ft per year); median of yearly mean discharges, 40 cfs (5.1 inches per year, 29,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,110 cfs Dec. 15 (gage height, 7.84 ft); minimum daily, 0.13 cfs Oct. 25, 26.

Period of record: Maximum discharge, 6,150 cfs Sept. 21, 1965 (gage height, 18.22 ft in gage well, 18.51 ft, from outside floodmark), from rating curve extended above 4,100 cfs on basis of contracted-opening measurement of peak flow; no flow at times most years.

Flood of Aug. 3, 1948, reached a stage of about 27 ft, from floodmarks established by local residents (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor.

REVISIONS (WATER YEARS).--WSP 1628: 1958 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 20-29; stage-discharge relation affected by ice Jan. 4-7, 12-15, Jan. 25 to Feb. 29, Mar. 3-5).

1.95	.13	2.5	28
2.0	.53	2.8	65
2.1	3.5	3.5	162
2.2	7.3	5.0	480
2.3	12	7.0	900

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.50	3.1	3.9	63	7.3	106	98	51	19	33	5.8	1.0
2	.44	18	3.1	53	7.6	51	84	48	18	28	8.0	1.7
3	.97	6.9	2.8	42	7.8	28	83	41	16	23	7.7	2.2
4	.85	3.4	2.4	32	7.2	21	67	35	15	19	6.0	2.3
5	.73	1.7	2.4	36	6.0	15	60	32	14	17	4.8	1.5
6	.55	.68	3.5	34	5.7	18	60	33	32	16	398	.93
7	.36	.42	5.0	31	5.5	23	55	36	32	17	205	1.3
8	.31	.33	4.6	29	5.7	15	40	57	30	15	75	.94
9	.25	.33	4.9	37	6.0	11	37	55	39	13	50	.56
10	.25	.33	26	31	6.3	12	40	45	26	12	32	.38
11	.25	.33	31	25	6.6	13	39	40	20	11	23	.56
12	.25	.33	18	21	7.0	23	38	38	20	9.2	18	2.0
13	.21	.33	11	15	7.5	111	39	40	33	8.6	99	3.3
14	.19	.42	11	10	8.0	126	33	49	275	9.1	141	14
15	.15	.33	768	8.0	10	110	31	46	862	14	32	4.6
16	.15	.33	351	7.3	11	167	59	41	373	11	19	2.4
17	.19	.33	138	7.8	70	128	55	37	157	27	14	1.9
18	.25	1.7	79	24	130	90	47	34	102	53	10	.99
19	.36	1.7	65	23	60	71	48	31	81	40	7.5	1.0
20	.42	.83	52	19	35	63	48	29	314	63	5.9	1.1
21	1.3	1.7	39	16	55	57	250	28	129	29	4.7	1.5
22	.36	1.1	29	16	90	47	344	27	76	17	4.0	1.8
23	1.2	1.1	31	18	45	39	170	27	57	14	3.3	1.0
24	.58	1.4	31	14	40	35	112	35	48	12	3.4	.78
25	.13	1.7	28	9.2	42	33	80	24	41	9.5	3.9	1.2
26	.13	2.1	32	6.0	30	31	66	20	35	22	9.8	3.0
27	.19	3.5	29	9.0	50	36	56	18	29	21	4.9	1.6
28	.18	3.5	23	9.4	160	39	51	19	136	13	3.4	3.2
29	.23	3.9	25	9.8	190	39	49	31	69	9.6	2.2	6.2
30	2.2	4.6	123	6.2	------	51	50	30	42	7.7	1.9	2.3
31	2.8	------	89	7.0	------	78	------	22	------	6.4	1.4	------
TOTAL	16.93	66.42	2,061.6	656.5	1,072.2	1,683	2,297	1,107	3,140	602.1	1,200.2	67.24
MEAN	.55	2.21	66.5	21.2	37.0	54.3	76.6	35.7	105	19.4	38.7	2.24
MAX	2.8	18	768	63	190	167	344	57	862	63	398	14
MIN	.13	.33	2.4	6.0	5.5	11	31	18	14	6.4	1.4	.38
CFSM	.005	.02	.63	.20	.35	.51	.72	.34	.99	.18	.37	.02
IN.	.006	.02	.72	.23	.38	.59	.81	.39	1.10	.21	.42	.02
AC-FT	34	132	4,090	1,300	2,130	3,340	4,560	2,200	6,230	1,190	2,380	133

CAL YR 1971 TOTAL 11,707.02 MEAN 32.1 MAX 1,400 MIN 0 CFSM .30 IN 4.11 AC-FT 23,220
WTR YR 1972 TOTAL 13,970.19 MEAN 38.2 MAX 862 MIN .13 CFSM .36 IN 4.90 AC-FT 27,710

PEAK DISCHARGE (BASE, 900 CFS).--Dec. 15 (1130) 1,110 cfs (7.84 ft); June 15 (2330) 1,000 cfs (7.61 ft).

05474000 SKUNK RIVER AT AUGUSTA, IOWA

LOCATION.--Lat 40°45'13", long 91°16'40", in NE1/4 NE1/4 sec.26, T.69 N., R.4 W., Des Moines County, on left bank 300 ft upstream from bridge on State Highway 394 at Augusta, 2.0 miles upstream from Long Creek, and at mile 12.5.

DRAINAGE AREA.--4,303 sq mi.

PERIOD OF RECORD.--September to November 1913, October 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 521.24 ft above mean sea level. Prior to Nov. 15, 1913, nonrecording gage at site 400 ft upstream at datum about 0.7 ft higher. May 27, 1915, to Jan. 14, 1935, nonrecording gage at site 400 ft upstream at present datum.

AVERAGE DISCHARGE.--58 years (1914-72), 2,223 cfs (7.02 inches per year, 1,611,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 14,400 cfs Apr. 23 (gage height, 13.50 ft); minimum daily, 72 cfs Oct. 13, 15.

Period of record: Maximum discharge, 51,000 cfs Apr. 3, 1960 (gage height, 25.00 ft); minimum daily, 7 cfs Aug. 27 to Sept. 1, 1934.

Flood of June 1, 1903, reached a stage of about 21 ft (discharge, about 45,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Five discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1308: 1915 (M), 1919-27 (M), 1932-34 (M), 1936, 1937-38 (M), 1942 (M). WSP 1438: Drainage area, WRD Iowa 1971: 1966 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Nov. 2-6, Mar. 7-11, Mar. 28 to Apr. 20, June 20 to Aug. 6, Sept. 20-30; stage-discharge relation affected by ice Dec. 31 to Jan. 16, Jan. 22 to Mar. 2).

1.3	53	2.5	800
1.5	109	4.0	2,250
1.7	191	8.0	7,100
2.0	385	14.0	15,100

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	166	289	2,000	100	5,000	2,130	9,080	2,830	2,240	1,900	1,020
2	115	345	282	1,500	98	4,500	2,110	7,790	2,020	2,010	1,670	967
3	158	1,970	277	1,100	96	4,050	1,940	7,710	1,730	1,820	1,590	1,060
4	106	2,390	266	800	93	3,960	1,830	5,010	1,580	1,680	2,160	1,880
5	99	1,500	253	450	90	3,870	1,740	3,640	1,445	1,570	2,810	1,320
6	90	1,090	245	900	92	3,230	1,620	3,160	1,640	1,500	4,630	1,030
7	83	776	245	1,300	94	2,210	1,520	3,260	2,720	1,410	6,520	922
8	86	585	249	1,400	94	1,740	1,430	6,200	2,210	1,340	7,780	856
9	87	485	293	1,050	96	1,560	1,300	12,500	2,340	1,280	7,210	800
10	90	418	412	800	96	2,380	1,200	13,300	2,990	1,240	6,470	758
11	77	364	746	700	97	2,340	1,140	11,200	2,510	1,210	6,380	740
12	75	317	1,120	600	100	2,410	1,150	9,000	2,160	1,160	6,620	1,610
13	72	287	1,050	500	100	3,890	1,140	6,330	1,970	1,100	6,990	5,370
14	73	266	824	400	110	4,330	1,100	5,190	4,010	1,070	5,930	5,600
15	72	251	6,000	350	120	4,180	1,090	4,880	9,100	1,270	4,790	6,290
16	79	230	11,000	370	130	3,740	1,290	4,310	8,140	1,490	4,030	6,030
17	77	226	9,660	400	140	3,690	2,790	3,750	7,200	1,720	2,920	4,330
18	74	243	10,000	516	400	3,180	4,640	3,230	6,960	1,740	2,310	2,930
19	87	241	4,250	527	1,090	2,700	3,780	2,810	7,030	1,810	2,000	2,410
20	113	223	2,130	526	1,900	2,280	2,820	2,500	9,760	2,410	1,770	2,090
21	156	325	1,760	499	903	2,020	4,350	2,250	9,940	2,970	1,550	1,850
22	179	167	1,470	470	920	1,860	12,900	3,160	8,140	2,330	1,440	1,640
23	177	167	1,270	420	940	1,700	14,200	3,010	6,820	1,980	1,320	1,640
24	163	215	1,130	375	890	1,580	11,600	1,890	5,720	1,630	1,220	1,510
25	147	211	1,110	[illegible]	690	1,480	6,260	2,080	4,790	1,430	1,170	1,380
26	155	207	1,070	263	550	1,380	6,000	2,440	3,610	1,490	1,900	1,330
27	174	216	1,040	160	700	1,330	5,270	2,140	2,940	1,690	1,810	1,290
28	177	216	990	120	1,100	1,340	2,870	1,830	2,810	2,370	1,600	1,220
29	122	241	891	115	2,460	1,360	2,650	2,350	2,710	3,520	1,380	1,190
30	186	265	1,990	169	------	1,470	3,820	2,460	2,940	3,510	1,270	1,190
31	181	------	[illegible]	160	------	1,890	------	[illegible]	------	2,480	[illegible]	------
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	179	2,390	11,000	[illegible]	[illegible]	5,000	14,200	13,300	9,940	3,520	7,780	[illegible]
MIN	72	167	245	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	740
CFSM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
IN.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AC-FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CAL YR 1971 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]
WTR YR 1972 TOTAL [illegible] MEAN [illegible] MAX [illegible] MIN [illegible] CFSM [illegible] IN [illegible] AC-FT [illegible]

PEAK DISCHARGE (BASE, [illegible] CFS).-- No peak above base.

05474500 MISSISSIPPI RIVER AT KEOKUK, IOWA

LOCATION.--Lat 41°23'37", long 91°22'27", in SE1/4 SW1/4 sec.30, T.65 N., R.4 W., Lee County, near right bank in tailwater of dam and powerplant of Union Electric Co. at Keokuk, 0.2 mile upstream from bridge on U.S. Highway 136, 2.7 miles upstream from Des Moines River, and at mile 364.2 upstream from Ohio River.

DRAINAGE AREA.--119,000 sq mi, approximately.

PERIOD OF RECORD.--January 1878 to current year.

GAGE.--Water-stage recorder. Datum of gage is 477.41 ft above mean sea level (levels by Corps of Engineers); 477.83 ft above mean sea level, adjustment of 1912; 477.34 ft above mean gulf level; and 484.65 ft above Memphis datum. Jan. 1, 1878, to May 1913, nonrecording gage at Galland (formerly Nashville), 8 miles upstream; zero of gage was set to low-water mark of 1864, or 496.94 ft above mean sea level, adjustment of 1912.

AVERAGE DISCHARGE.--94 years, 61,520 cfs (7.02 inches per year, 44,570,000 acre-ft per year).

EXTREMES.--Current year: Maximum daily discharge, 192,000 cfs May 11; minimum daily, 26,500 cfs Jan. 5.

Period of record: Maximum daily discharge, 327,000 cfs May 1, 1965; maximum gage height, 22.14 ft May 1, 1965; minimum daily discharge, 5,000 cfs Dec. 27, 1933.

Flood of June 6, 1851, reached a stage of 21.0 ft, present site and datum, estimated as 13.5 ft at Galland (discharge, 360,000 cfs).

REMARKS.--Discharge computed from records of operation of turbines in powerplant and spillway gates in dam. Flow regulated by powerplant above station since 1913, and reservoirs and navigation dams above station since about 1935. Records for May 1913 to September 1937 adjusted for change in contents in Keokuk Reservoir, those after September 1937 unadjusted.

COOPERATION.--Records furnished by Union Electric Co., formerly Mississippi River Power Co.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32,100	45,000	74,600	58,900	34,900	72,500	116,000	177,000	76,400	65,900	77,100	103,000
2	32,900	51,400	74,400	57,300	34,100	72,400	120,000	182,000	76,400	65,300	83,200	102,000
3	38,400	55,500	71,600	54,700	35,100	72,500	121,000	191,000	75,600	61,700	98,500	100,000
4	36,000	59,300	67,500	45,700	33,300	74,500	120,000	189,000	73,100	59,700	120,000	101,000
5	36,700	60,000	64,000	26,500	32,100	67,000	122,000	187,000	69,600	55,900	132,000	101,000
6	36,400	62,900	64,200	29,000	32,500	55,100	124,000	180,000	68,800	55,300	144,000	96,600
7	40,000	64,500	64,200	38,100	33,100	58,000	128,000	179,000	73,000	52,900	156,000	88,000
8	41,600	66,800	60,400	40,500	33,100	59,500	124,000	174,000	70,000	49,800	160,000	77,900
9	42,400	71,800	56,600	43,900	34,400	55,600	124,000	185,000	71,000	47,600	160,000	78,800
10	40,200	69,200	54,100	50,300	34,700	56,600	125,000	190,000	74,500	47,100	160,000	75,200
11	35,300	73,700	55,600	52,100	34,800	56,800	120,000	192,000	72,700	50,500	157,000	66,800
12	34,000	79,200	58,700	48,700	33,400	55,200	115,000	187,000	75,400	53,200	148,000	71,000
13	30,900	78,200	58,600	44,200	33,200	57,700	111,000	178,000	75,400	53,200	146,000	83,500
14	28,100	75,900	60,400	43,600	33,100	72,300	108,000	168,000	74,300	55,200	139,000	87,600
15	27,000	76,000	70,800	39,100	33,100	86,200	106,000	158,000	111,000	59,300	128,000	97,200
16	27,300	71,600	89,800	35,800	33,700	96,600	107,000	152,000	112,000	68,500	115,000	108,000
17	30,000	71,100	98,800	36,400	33,300	102,000	110,000	147,000	104,000	68,700	99,700	100,000
18	32,400	72,300	89,400	38,900	34,200	116,000	127,000	139,000	96,500	78,300	92,200	91,300
19	29,100	70,100	67,000	40,600	35,800	114,000	142,000	133,000	87,200	86,200	88,400	82,200
20	30,900	68,400	51,800	41,700	35,100	105,000	141,000	125,000	94,200	90,300	84,800	76,800
21	34,800	69,000	49,100	40,100	33,800	99,100	141,000	119,000	84,400	83,500	82,600	74,400
22	35,400	65,200	50,000	39,700	35,900	97,600	150,000	114,000	81,500	69,700	81,300	63,200
23	38,600	62,000	55,400	39,100	35,300	109,000	155,000	102,000	79,300	70,400	80,100	73,500
24	43,500	57,600	55,500	39,400	35,200	122,000	159,000	97,000	77,300	71,600	82,200	69,500
25	41,000	58,900	55,500	38,700	35,100	122,000	158,000	94,700	77,400	70,300	79,600	70,200
26	39,400	62,100	55,700	37,400	35,700	118,000	158,000	89,100	71,200	72,700	79,800	71,600
27	38,200	66,800	56,900	35,900	34,800	118,000	161,000	86,200	69,500	75,700	92,300	75,700
28	37,900	68,000	59,800	37,500	34,900	112,000	165,000	83,100	67,200	74,000	100,000	79,400
29	41,100	70,400	53,800	37,100	42,200	112,000	167,000	78,900	66,200	81,500	110,000	88,300
30	44,000	72,200	53,100	35,000	------	114,000	173,000	77,500	67,200	81,000	112,000	104,000
31	44,600	------	54,900	35,300	------	116,000	------	76,700	------	78,400	109,000	------
TOTAL	1,120.2M	1,995.1M	1,952.2M	1,281.2M	999,900	2,745.2M	3,998.0M	4,431.2M	2,372.3M	2,053.4M	3,497.8M	2,557.7M
MEAN	36,140	66,500	62,970	41,330	34,480	88,550	133,300	142,900	79,080	66,240	112,800	85,260
MAX	44,600	79,200	98,800	58,900	42,200	122,000	173,000	192,000	112,000	90,300	160,000	108,000
MIN	27,000	45,000	49,100	26,500	32,100	55,100	106,000	76,700	66,200	47,100	77,100	63,200
CFSM	.30	.56	.53	.35	.29	.74	1.12	1.20	.66	.56	.95	.72
IN.	.35	.62	.61	.40	.31	.86	1.25	1.39	.74	.64	1.09	.80
AC-FT	2,222M	3,957M	3,872M	2,541M	1,983M	5,445M	7,930M	8,789M	4,705M	4,073M	6,938M	5,073M

CAL YR 1971 TOTAL 25,431,300 MEAN 69,670 MAX 185,000 MIN 17,400 CFSM .59 IN 7.95 AC-FT 50,440,000
WTR YR 1972 TOTAL 29,004,200 MEAN 79,250 MAX 192,000 MIN 26,500 CFSM .67 IN 9.07 AC-FT 57,530,000

05476500 DES MOINES RIVER AT ESTHERVILLE, IOWA

LOCATION.--Lat 43°23'51", long 94°50'38", in SW1/4 SE1/4 sec.10, T.99 N., R.34 W., Emmet County, on right bank in city park, 1,200 ft downstream from bridge on State Highway 9 at Estherville, 0.1 mile upstream from School Creek, 2.3 miles upstream from Brown Creek, and at mile 404.2.

DRAINAGE AREA.--1,372 sq mi.

PERIOD OF RECORD.--October 1951 to current year. Prior to November 1951, monthly discharge only, published in WSP 1728.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,247.55 ft above mean sea level.

AVERAGE DISCHARGE.--21 years, 305 cfs (3.02 inches per year, 221,000 acre-ft per year); median of yearly mean discharges, 220 cfs (2.2 inches per year, 159,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,520 cfs Mar. 19 (gage height, 6.22 ft); minimum daily, 11 cfs Feb. 10-13.

Period of record: Maximum discharge, 16,000 cfs Apr. 12, 1969 (gage height, 17.68 ft, from floodmark); minimum daily, 0.2 cfs Sept. 21, 22, 28, Oct. 19, 1958.

REMARKS.--Records good except those for winter period, which are fair. Diurnal fluctuation at low flow caused by powerplant 0.3 mile above station which discharges an average daily flow of about 0.5 cfs into river from subterranean wells. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 4-10, Dec. 16 to Mar. 7).

1.7	11	2.5	120
1.8	18	3.0	250
2.0	38	6.0	1,440
2.2	64	7.0	1,880

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	89	66	31	13	35	440	640	819	325	358	49
2	22	78	95	32	13	35	414	896	813	296	341	46
3	22	64	103	30	13	36	391	1,080	801	268	304	43
4	23	55	85	29	13	31	382	1,120	793	246	273	40
5	20	50	86	28	12	29	363	1,060	792	229	254	38
6	18	36	81	27	12	45	353	1,100	783	223	247	50
7	18	40	70	27	12	110	346	1,150	774	218	227	47
8	20	65	54	26	12	114	329	1,210	770	220	222	44
9	21	68	43	26	12	136	321	1,200	761	236	210	41
10	19	56	59	26	11	136	306	1,120	724	244	193	39
11	22	50	63	26	11	161	308	1,040	678	228	182	39
12	24	55	62	27	11	269	300	974	654	245	175	36
13	22	57	60	25	11	334	298	944	632	246	164	36
14	21	57	57	24	12	457	303	937	597	259	152	35
15	21	56	55	23	13	585	294	960	559	251	134	34
16	23	60	52	19	13	603	295	926	514	243	119	18
17	24	64	48	15	13	666	291	884	478	307	109	12
18	25	84	46	17	12	754	289	849	462	317	111	13
19	29	96	44	18	12	1,080	303	809	457	280	105	13
20	27	100	42	18	13	1,290	278	768	450	533	93	13
21	31	95	41	17	13	1,020	324	731	434	614	85	20
22	30	62	40	17	14	908	400	691	417	600	79	27
23	27	65	43	17	15	815	468	674	407	583	70	30
24	25	87	44	17	15	716	482	681	396	546	81	29
25	23	85	42	16	16	673	504	697	373	518	82	35
26	25	105	37	15	16	646	528	677	350	524	81	43
27	39	108	34	14	16	607	543	653	342	555	76	39
28	49	125	33	13	17	560	547	653	412	526	70	36
29	57	94	33	13	30	526	551	675	381	479	65	35
30	76	75	32	13	------	490	571	715	349	430	62	42
31	103	------	31	13	------	456	------	787	------	390	56	------
TOTAL	923	2,181	1,681	659	396	14,323	11,522	27,301	17,172	11,179	4,780	1,022
MEAN	29.8	72.7	54.2	21.3	13.7	462	384	881	572	361	154	34.1
MAX	103	125	103	32	30	1,290	571	1,210	819	614	358	50
MIN	17	36	31	13	11	29	278	640	342	218	56	12
CFSM	.02	.05	.04	.02	.01	.34	.28	.64	.42	.26	.11	.02
IN.	.03	.06	.05	.02	.01	.39	.31	.74	.47	.30	.13	.03
AC-FT	1,830	4,330	3,330	1,310	785	28,410	22,850	54,150	34,060	22,170	9,480	2,030

CAL YR 1971 TOTAL 17,821 MEAN 48.8 MAX 3.540 MIN 11 CFSM .04 IN .48 AC-FT 35,350
WTR YR 1972 TOTAL 93,139 MEAN 254 MAX 1,290 MIN 11 CFSM .19 IN 2.53 AC-FT 184,700

PEAK DISCHARGE (BASE, 1,500 CFS).--Mar. 19 (1545) 1,520 cfs (6.22 ft).

05476750 DES MOINES RIVER AT HUMBOLDT, IOWA

LOCATION.--Lat 42°43'12", long 94°13'06", in SE1/4 SW1/4 sec.1, T.91 N., R.29 W., Humboldt County, on left bank 5 ft downstream from First Avenue bridge in city of Humboldt, about 700 ft below dam, 3.2 miles upstream from Indian Creek, 3.9 miles upstream from East Fork Des Moines River, and at mile 334.3.
DRAINAGE AREA.--2,256 sq mi.
PERIOD OF RECORD.--October 1964 to current year. Prior to October 1970, published as West Fork Des Moines River at Humboldt.
GAGE.--Water-stage recorder. Datum of gage is 1,053.54 ft above mean sea level. Prior to Oct. 3, 1966, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--8 years, 586 cfs (4.80 inches per year, 577,400 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 2,840 cfs May 3 (gage height, 6.67 ft); minimum daily, 55 cfs Oct. 13.

Period of record: Maximum discharge, 18,000 cfs Apr. 14, 1969 (gage height, 15.40 ft); minimum daily, 20 cfs Jan. 10-12, 1968.

Flood of June 23, 1947, reached a stage of 12.2 ft (discharge, 11,000 cfs) at present site and datum.
REMARKS.--Records good except those for winter period, which are poor. Daily nonrecording gage readings available in district office for period Mar. 7, 1940, to Sept. 30, 1964. Discharge not published for this period because of extreme regulation at dam 700 ft upstream from gage. Power generation and streamflow regulation discontinued August 1964. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 29 to Mar. 18).

2.66	55	4.0	600
2.8	80	5.0	1,330
3.1	158	7.0	3,270
3.5	315		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	492	264	140	80	300	709	1,730	1,430	641	848	252
2	86	440	320	124	80	270	676	2,160	1,450	612	837	244
3	84	375	330	120	78	250	646	2,550	1,410	583	751	232
4	103	328	320	116	78	260	617	2,690	1,410	539	674	222
5	104	301	330	114	82	220	595	2,660	1,990	506	752	207
6	95	263	330	110	80	212	581	2,600	1,940	481	1,690	194
7	92	183	290	106	78	240	567	2,540	1,810	465	1,290	224
8	89	196	260	104	77	300	559	2,480	1,800	461	1,130	244
9	87	261	230	110	78	460	536	2,390	1,770	480	976	230
10	84	247	220	120	82	440	515	2,330	1,660	509	816	220
11	81	239	180	124	82	430	506	2,230	1,530	470	707	219
12	70	226	120	120	80	440	494	2,110	1,440	486	610	223
13	55	209	110	110	80	520	499	2,030	1,560	586	548	222
14	56	215	170	104	82	580	492	1,960	1,330	757	502	219
15	60	208	180	104	80	740	490	1,870	1,280	897	450	211
16	72	246	150	100	80	950	497	1,810	1,210	903	417	203
17	81	274	140	98	82	1,170	478	1,760	1,110	1,150	377	192
18	86	350	140	97	80	1,090	472	1,640	1,020	1,450	347	185
19	87	474	180	94	82	1,060	466	1,700	962	1,320	325	175
20	88	487	190	94	82	1,150	463	1,570	932	1,100	309	175
21	105	446	190	94	83	1,510	520	1,460	897	1,150	301	172
22	106	399	180	94	79	1,640	547	1,360	836	1,500	281	175
23	103	387	180	90	85	1,430	629	1,270	706	1,350	268	158
24	101	356	200	92	90	1,270	674	1,240	753	1,210	263	165
25	97	342	200	96	90	1,130	698	1,190	729	1,030	286	561
26	99	344	160	88	88	996	700	1,190	702	938	325	1,110
27	137	344	132	86	96	967	726	1,200	670	885	322	1,110
28	128	353	140	84	130	910	883	1,300	656	860	300	892
29	182	370	140	84	230	839	1,340	1,590	675	854	281	727
30	244	350	144	82	------	787	1,540	1,580	686	800	266	611
31	363	------	146	80	------	746	------	1,460	------	734	260	------
TOTAL	3,318	9,705	6,266	3,179	2,574	23,307	19,115	57,650	36,354	25,707	17,509	9,974
MEAN	107	324	202	103	88.8	752	637	1,860	1,212	829	565	332
MAX	363	492	330	140	230	1,640	1,540	2,690	1,990	1,500	1,690	1,110
MIN	55	183	110	80	77	212	463	1,190	656	461	260	158
CFSM	.05	.14	.09	.05	.04	.33	.28	.82	.54	.37	.25	.15
IN.	.05	.16	.10	.05	.04	.38	.32	.95	.60	.42	.29	.16
AC-FT	6,580	19,250	12,430	6,310	5,110	46,230	37,910	114,300	72,110	50,990	34,730	19,780

CAL YR 1971 TOTAL 318,822 MEAN 873 MAX 5,300 MIN 55 CFSM .39 IN 5.26 AC-FT 632,400
WTR YR 1972 TOTAL 214,658 MEAN 586 MAX 2,690 MIN 55 CFSM .26 IN 3.54 AC-FT 425,800

PEAK DISCHARGE (BASE, 2,800 CFS).--May 3 (1615) 2,840 cfs (6.67 ft).

05478000 EAST FORK DES MOINES RIVER NEAR BURT, IOWA

LOCATION.--Lat 43°12'38", long 94°10'35", in NW1/4 NE1/4 sec.20, T.97 N., R.28 W., Kossuth County, on right bank 30 ft downstream from bridge on county highway, 0.8 mile upstream from Buffalo Creek, 2.2 miles northeast of Burt, 4.7 miles downstream from Mud Creek, and at mile 389.7 upstream from mouth of Des Moines River.
DRAINAGE AREA.--462 sq mi.
PERIOD OF RECORD.--October 1951 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,114.42 ft above mean sea level.
AVERAGE DISCHARGE.--21 years, 136 cfs (4.00 inches per year, 98,530 acre-ft per year); median of yearly mean discharges, 120 cfs (3.5 inches per year, 86,900 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 481 cfs May 4 (gage height, 8.68 ft); maximum gage height, 9.83 ft June 10 (backwater from Buffalo Creek); minimum daily discharge, 0.76 cfs Oct. 1.

Period of record: Maximum discharge, 5,000 cfs Apr. 6, 1965 (gage height, 14.21 ft, backwater from ice); no flow Jan. 24 to Mar. 3, 1959.
REMARKS.--Records good except those for periods of ice effect or backwater from Buffalo Creek, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1708: 1955.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	65	47	14	3.3	200	93	199	145	96	184	13
2	1.7	61	56	12	3.2	192	90	316	134	99	112	13
3	1.6	46	50	11	3.1	166	86	462	128	90	106	12
4	1.5	35	44	10	3.1	154	80	476	120	86	98	11
5	1.4	30	42	9.5	3.0	152	82	414	115	84	91	10
6	1.2	22	40	8.7	2.8	160	76	347	110	75	83	15
7	.89	24	37	7.8	2.7	170	72	326	104	68	78	18
8	2.9	23	34	7.2	2.5	196	69	314	124	73	81	14
9	5.0	18	37	7.0	2.5	244	71	295	124	80	76	12
10	1.8	19	40	7.0	2.5	266	63	270	146	85	71	11
11	.95	17	34	7.0	2.6	262	58	250	176	86	65	15
12	.92	16	29	6.8	2.7	252	62	218	230	74	54	14
13	1.1	14	34	6.4	2.8	236	63	214	295	69	49	14
14	1.6	13	37	6.0	2.9	222	59	211	288	78	48	12
15	1.8	12	35	5.6	3.0	350	60	208	250	84	43	11
16	1.8	19	32	5.2	3.1	370	59	204	197	96	38	10
17	2.0	25	29	5.0	3.2	340	52	191	165	110	34	9.1
18	2.5	41	30	4.7	3.3	280	49	176	135	165	29	9.1
19	3.3	45	31	4.4	3.3	248	44	174	113	142	25	8.5
20	4.2	56	30	4.2	3.4	234	44	174	105	124	23	11
21	6.4	56	25	4.1	3.5	212	58	168	92	116	22	13
22	5.9	48	22	3.9	3.6	195	77	160	82	108	20	10
23	5.6	50	21	3.8	3.8	178	91	148	81	104	18	9.2
24	4.6	48	22	3.7	4.0	153	94	141	80	98	17	8.9
25	4.2	46	22	3.8	4.3	132	98	136	70	95	20	22
26	7.7	46	20	4.1	4.3	123	93	130	62	92	23	140
27	8.6	41	20	4.2	4.8	118	84	128	56	93	20	181
28	12	41	18	4.2	16	114	93	141	51	98	20	136
29	9.9	35	17	3.8	70	108	120	156	53	92	18	130
30	20	42	15	3.7	------	104	149	157	80	94	16	81
31	52	------	15	3.5	------	99	------	142	------	105	15	------
TOTAL	175.82	1,054	965	192.3	173.3	6,230	2,289	7,046	3,911	2,959	1,597	973.8
MEAN	5.67	35.1	31.1	6.20	5.98	201	76.3	227	130	95.5	51.5	32.5
MAX	52	65	56	14	70	370	149	476	295	165	184	181
MIN	.76	12	15	3.5	2.5	99	44	128	51	68	15	8.5
CFSM	.01	.08	.07	.01	.01	.44	.17	.49	.28	.21	.11	.07
IN.	.01	.08	.08	.02	.01	.50	.18	.57	.31	.24	.13	.08
AC-FT	349	2,090	1,910	381	344	12,360	4,540	13,980	7,760	5,870	3,170	1,930

CAL YR 1971 TOTAL 74,109.68 MEAN 203 MAX 1,710 MIN .32 CFSM .44 IN 5.97 AC-FT 147,000
WTR YR 1972 TOTAL 27,566.22 MEAN 75.3 MAX 476 MIN .76 CFSM .16 IN 2.22 AC-FT 54,680

PEAK DISCHARGE (BASE, 500 CFS).--No peak above base.

05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IOWA

LOCATION.--Lat 42°43'26", long 94°11'30", in NW1/4 SE1/4 sec.6, T.91 N., R.28 W., Humboldt County, on right bank 50 ft upstream from old mill dam, in city park at east edge of Dakota City, 500 ft upstream from bridge on county highway P56, 0.6 mile downstream from bridge on State Highway 3, 3.4 miles upstream from confluence with Des Moines River, and at mile 333.8 upstream from mouth of Des Moines River.
DRAINAGE AREA.--1,308 sq mi.
PERIOD OF RECORD.--March 1940 to current year. Prior to October 1954, published as "near Hardy".
GAGE.--Water-stage recorder. Datum of gage is 1,038.71 ft above mean sea level. Prior to Oct. 1, 1954, nonrecording gage at site 8 miles upstream at different datum.
AVERAGE DISCHARGE.--32 years, 474 cfs (4.92 inches per year, 343,400 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,880 cfs June 13 (gage height, 11.28 ft); minimum daily, 14 cfs Oct. 5.

Period of record: Maximum discharge, 18,800 cfs June 21, 1954 (gage height, 16.95 ft, from floodmark, site and datum then in use); minimum daily, 5.0 cfs Sept. 23, 1948.

Flood of June 21, 1954, reached a stage of 24.02 ft (discharge, 17,400 cfs) at present site. Flood of September 1938 reached a stage of 17.4 ft (discharge, about 22.000 cfs) site and datum in use during the period 1940-54.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Two discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1944, 1945-47 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 1-3; stage-discharge relation affected by ice Nov. 30 to Mar. 17).

7.35	14	8.0	130
7.4	18	8.5	306
7.6	44	9.0	540
7.8	80	12.0	2,360

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	211	162	76	36	500	226	663	893	587	964	91
2	18	184	180	70	35	400	219	1,100	725	589	883	87
3	15	177	190	68	34	320	212	1,280	644	526	666	83
4	15	165	220	66	33	280	202	1,330	589	475	526	79
5	14	151	220	64	32	260	197	1,340	1,020	437	538	75
6	16	128	180	62	30	228	190	1,340	925	383	916	73
7	15	92	170	60	28	310	189	1,310	779	336	695	72
8	15	108	160	60	26	350	184	1,170	730	341	544	76
9	17	95	134	60	26	350	176	1,040	723	405	449	90
10	18	82	130	60	27	350	173	946	890	431	386	105
11	18	79	110	60	28	520	171	868	1,120	455	336	96
12	18	78	70	60	29	760	170	804	1,310	454	293	92
13	20	75	90	56	30	660	168	770	1,790	489	270	96
14	20	74	130	52	31	600	163	709	1,760	448	231	99
15	21	71	130	50	32	820	164	652	1,550	428	205	100
16	22	102	100	48	33	800	170	620	1,240	671	186	96
17	22	143	90	46	34	730	167	595	958	1,180	169	89
18	23	249	110	45	35	614	165	572	788	1,520	152	82
19	25	315	120	44	35	691	160	538	682	1,430	136	78
20	26	301	110	44	36	705	155	523	597	1,320	127	82
21	36	267	100	44	37	585	177	561	524	1,220	120	85
22	35	229	96	42	37	506	206	523	477	1,060	111	80
23	32	221	100	40	40	475	242	475	471	913	103	81
24	33	207	104	41	42	458	264	448	437	893	100	89
25	33	189	100	43	45	408	277	425	389	767	105	236
26	31	193	90	44	45	343	280	440	354	639	108	452
27	43	194	79	45	50	295	281	621	321	564	111	731
28	48	195	84	43	100	272	306	730	300	577	112	890
29	68	197	84	40	320	252	384	1,270	320	577	108	895
30	108	180	80	39	------	243	478	1,300	483	564	97	765
31	157	------	80	37	------	233	------	1,120	------	503	92	------
TOTAL	1,000	4,952	3,803	1,609	1,346	14,318	6,516	26,083	23,789	21,182	9,839	6,045
MEAN	32.3	165	123	51.9	46.4	462	217	841	793	683	317	202
MAX	157	315	220	76	320	820	478	1,340	1,790	1,520	964	895
MIN	14	71	70	37	26	228	155	425	300	336	92	72
CFSM	.02	.13	.09	.04	.04	.35	.17	.64	.61	.52	.24	.15
IN.	.03	.14	.11	.05	.04	.41	.19	.74	.68	.60	.28	.17
AC-FT	1,980	9,820	7,540	3,190	2,670	28,400	12,920	51,740	47,190	42,010	19,520	11,990

CAL YR 1971 TOTAL 204,030 MEAN 559 MAX 4,200 MIN 14 CFSM .43 IN 5.80 AC-FT 404,700
WTR YR 1972 TOTAL 120,482 MEAN 329 MAX 1,790 MIN 14 CFSM .25 IN 3.43 AC-FT 239,000

PEAK DISCHARGE (BASE, 1,500 CFS).--June 13 (1900) 1,880 cfs (11.28 ft); July 18 (1145) 1,530 cfs (10.72 ft).

05480000 LIZARD CREEK NEAR CLARE, IOWA

LOCATION.--Lat 42°32'35", long 94°20'45", in NE1/4 NE1/4 sec.11, T.89 N., R.30 W., Webster County, on right bank 20 ft downstream from bridge on county highway, 2.3 miles downstream from Drainage ditch 3, 3.0 miles south of Clare, and 8.2 miles upstream from South Lizard Creek.

DRAINAGE AREA.--257 sq mi.

PERIOD OF RECORD.--March 1940 to current year. Prior to April 1940, monthly discharge only, published in WSP 1308. Prior to October 1954, published as North Lizard Creek near Clare.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,079.30 ft above mean sea level. Prior to May 6, 1953, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--32 years, 90.6 cfs (4.79 inches per year, 65,640 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,460 cfs Aug. 7 (gage height, 7.06 ft); minimum daily, 1.1 cfs Oct. 10.

Period of record: Maximum discharge, 10,000 cfs June 23, 1947 (gage height, 16.0 ft, from floodmark), from rating curve extended above 5,300 cfs; no flow Sept. 30, 1943, Aug. 27-29, 1956, Jan. 15, 16, 1968.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1508: 1940, 1942, 1944-46 (M), 1947-48.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Aug. 6-12; stage-discharge relation affected by ice Nov. 7-9, Nov. 22 to Mar. 18).

3.0	1.1	3.3	25	5.0	500
3.1	6.4	3.6	76	6.0	945
3.2	14	4.0	173	7.0	1,510

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	108	25	14	4.6	154	48	376	140	46	440	61
2	3.2	82	24	13	4.5	100	50	524	125	49	338	56
3	3.9	67	23	14	4.4	66	52	508	112	45	229	53
4	2.0	55	21	13	4.2	90	47	410	100	40	161	51
5	1.6	49	20	14	3.8	111	43	324	110	38	221	50
6	1.3	41	19	14	3.6	106	44	324	125	43	1,320	48
7	1.4	21	18	15	3.2	104	42	350	121	57	1,370	60
8	1.3	27	17	16	3.2	103	39	311	126	48	1,120	68
9	1.2	31	16	14	3.6	122	35	266	131	47	1,040	61
10	1.1	32	19	12	3.6	150	38	230	117	42	707	60
11	1.2	28	16	11	3.3	172	40	205	101	37	497	62
12	2.1	26	13	9.5	3.3	196	39	191	104	40	361	68
13	2.6	25	20	8.0	3.2	220	41	203	278	46	278	101
14	2.6	22	20	8.4	3.2	200	40	204	269	58	225	99
15	2.5	22	20	8.8	3.2	184	39	184	176	113	185	83
16	3.1	25	20	8.6	3.2	196	42	167	132	88	159	75
17	3.3	40	17	8.4	3.1	138	43	158	114	537	135	65
18	3.4	68	17	6.2	3.1	120	41	158	105	920	118	58
19	4.3	102	16	5.2	3.2	109	41	138	96	542	101	53
20	4.5	99	17	5.3	3.2	99	39	127	91	313	87	56
21	9.7	85	16	5.5	3.4	89	46	119	85	228	81	55
22	9.9	60	16	5.6	3.7	90	60	113	79	174	73	48
23	11	54	16	5.7	4.0	80	71	107	73	136	66	46
24	7.8	49	17	5.8	4.2	68	66	107	67	127	62	46
25	5.3	44	16	5.8	4.4	61	59	101	62	104	68	156
26	3.2	39	16	5.9	4.5	69	54	94	59	90	80	713
27	9.3	35	16	5.8	4.9	71	55	90	54	76	81	656
28	14	32	17	5.7	7.6	62	137	102	56	67	75	458
29	22	29	14	5.6	14	59	331	254	52	62	68	346
30	51	27	16	5.5	------	54	356	198	48	56	62	280
31	132	------	15	4.9	------	50	------	160	------	50	62	------
TOTAL	323.2	1,424	553	280.2	121.4	3,493	2,078	6,803	3,308	4,319	9,870	4,092
MEAN	10.4	47.5	17.8	9.04	4.19	113	69.3	219	110	139	318	136
MAX	132	108	25	16	14	220	356	524	278	920	1,370	713
MIN	1.1	21	13	4.9	3.1	50	35	90	48	37	62	46
CFSM	.04	.18	.07	.04	.02	.44	.27	.85	.43	.54	1.24	.53
IN.	.05	.21	.08	.04	.02	.51	.30	.98	.48	.63	1.43	.59
AC-FT	641	2,820	1,100	556	241	6,930	4,120	13,490	6,560	8,570	19,580	8,120

CAL YR 1971 TOTAL 37,865.78 MEAN 104 MAX 1,690 MIN .76 CFSM .40 IN 5.48 AC-FT 75,110
WTR YR 1972 TOTAL 36,664.80 MEAN 100 MAX 1,370 MIN 1.1 CFSM .39 IN 5.31 AC-FT 72,720

PEAK DISCHARGE (BASE, 800 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
7-18	0945	6.05	970	9-27	1800	5.72	805
8-7	0600	7.06	1,460				

05480500 DES MOINES RIVER AT FORT DODGE, IOWA

LOCATION.--Lat 42°30'22", long 94°12'04", in NW1/4 SW1/4 sec.19, T.89 N., R.28 W., Webster County, on right bank 400 ft upstream from Soldier Creek, 1,800 ft downstream from Illinois Central Railroad bridge in Fort Dodge, 2,000 ft downstream from Lizard Creek, and at mile 314.6.

DRAINAGE AREA.--4,190 sq mi.

PERIOD OF RECORD.--April 1905 to July 1906 (no winter records), October 1913 to September 1927 (published as "at Kalo"), October 1946 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 969.38 ft above mean sea level. See WSP 1728 for history of changes prior to Dec. 8, 1949.

AVERAGE DISCHARGE.--40 years (1913-27, 1946-72), 1,341 cfs (4.35 inches per year, 971,600 acre-ft per year); median of yearly mean discharges, 1,170 cfs (3.8 inches per year, 848,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,270 cfs Aug. 6 (gage height, 7.46 ft); minimum daily, 69 cfs Oct. 16.

Period of record: Maximum discharge, 35,600 cfs Apr. 8, 1965 (gage height, 17.79 ft); maximum gage height, 19.62 ft, from floodmark, June 23, 1947, present site and datum; minimum daily discharge, 14 cfs Nov. 3, 1955.

REMARKS.--Records good except those for winter period, which are poor. Occasional minor regulation caused by dam 0.8 mile upstream from gage. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1308: 1924, 1925 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 3 to Mar. 10).

2.72	69	3.5	420	5.0	2,700
2.9	113	4.0	890	6.0	4,780
3.2	238	4.5	1,700	7.0	7,170

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	143	988	562	250	135	1,000	932	2,990	2,610	1,200	3,290	456
2	81	856	587	230	130	900	917	3,940	2,390	1,220	3,450	432
3	113	736	640	220	130	800	944	4,420	2,230	1,140	2,650	407
4	135	614	640	220	130	750	858	4,480	2,080	1,040	1,920	389
5	170	589	630	215	130	700	817	4,400	3,080	937	2,130	375
6	132	452	600	215	135	800	799	4,510	3,130	882	7,060	365
7	134	371	550	205	140	1,200	790	4,480	2,840	855	5,480	431
8	115	404	510	200	135	1,050	745	4,240	2,760	861	4,890	440
9	86	422	470	210	135	1,250	734	3,890	2,730	937	3,810	434
10	107	502	410	220	135	1,340	738	3,660	2,710	964	2,920	455
11	136	428	250	220	135	1,300	711	3,390	2,800	933	2,300	452
12	117	380	200	210	135	1,200	709	3,210	2,840	945	1,800	605
13	104	337	250	200	135	1,360	715	3,160	3,740	1,040	1,550	913
14	102	349	350	180	140	1,370	691	3,120	3,740	1,190	1,330	736
15	73	366	360	180	140	1,700	665	2,940	3,160	1,360	1,150	616
16	69	418	300	175	140	1,940	733	2,760	2,750	1,550	989	552
17	97	505	290	175	135	2,200	705	2,670	2,280	3,430	866	495
18	159	694	310	170	135	2,040	693	2,520	2,010	5,020	775	458
19	134	943	360	165	138	1,920	688	2,370	1,790	4,200	693	416
20	123	976	370	165	140	2,020	672	2,270	1,620	3,410	636	411
21	139	934	360	165	145	2,140	762	2,190	1,500	2,860	604	422
22	177	876	350	155	145	2,160	814	2,070	1,400	2,910	559	386
23	110	740	350	150	145	1,980	949	1,930	1,270	2,560	522	371
24	140	743	350	170	150	1,800	1,020	1,840	1,210	2,350	503	373
25	138	639	340	170	160	1,580	1,050	1,760	1,180	2,110	545	876
26	171	708	330	160	175	1,390	1,040	1,780	1,100	1,790	577	2,530
27	192	641	280	155	190	1,390	1,070	2,030	1,010	1,570	584	2,900
28	252	677	270	150	450	1,270	1,300	2,220	975	1,540	552	2,620
29	256	741	260	145	800	1,180	2,140	3,360	971	1,530	517	2,310
30	358	630	260	140	------	1,090	2,590	3,370	1,110	1,450	478	1,920
31	621	------	260	135	------	1,020	------	2,960	------	1,350	460	------
TOTAL	4,884	18,659	12,049	5,720	5,068	43,840	27,991	94,930	65,016	55,134	55,590	24,546
MEAN	158	622	389	185	175	1,414	933	3,062	2,167	1,779	1,793	818
MAX	621	988	640	250	800	2,200	2,590	4,510	3,740	5,020	7,060	2,900
MIN	69	337	200	135	130	700	665	1,760	971	855	460	365
CFSM	.04	.15	.09	.04	.04	.34	.22	.73	.52	.42	.43	.20
IN.	.04	.17	.11	.05	.04	.39	.25	.84	.58	.49	.49	.22
AC-FT	9,690	37,010	23,900	11,350	10,050	86,960	55,520	188,300	129,000	109,400	110,300	48,690

CAL YR 1971 TOTAL 605,692 MEAN 1,659 MAX 9,950 MIN 69 CFSM .40 IN 5.38 AC-FT 1,201,000
WTR YR 1972 TOTAL 413,427 MEAN 1,130 MAX 7,060 MIN 69 CFSM .27 IN 3.67 AC-FT 820,000

PEAK DISCHARGE (BASE, 6,000 CFS).--Aug. 6 (0130) 8,270 cfs (7.46 ft).

05481000 BOONE RIVER NEAR WEBSTER CITY, IOWA

LOCATION.--Lat 42°26'01", long 93°48'12", in NW1/4 SE1/4 sec.18, T.88 N., R.25 W., Hamilton County, on right bank 10 ft upstream from bridge on State Highway 17, 2.5 miles southeast of junction of U.S. Highway 20 and State Highway 17 in Webster City, and 3.2 miles downstream from Brewers Creek.
DRAINAGE AREA.--844 sq mi.
PERIOD OF RECORD.--March 1940 to current year.
GAGE.--Water-stage recorder and concrete control. Datum of gage is 989.57 ft above mean sea level. Prior to June 26, 1940, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--32 years, 356 cfs (5.73 inches per year, 257,900 acre-ft per year); median of yearly mean discharges, 270 cfs (4.3 inches per year, 196,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 3,730 cfs Aug. 6 (gage height, 7.70 ft); minimum daily, 13 cfs Oct. 15, 17.

Period of record: Maximum discharge, 20,300 cfs June 22, 1954 (gage height, 18.55 ft); minimum daily, 1.6 cfs Sept. 30, Oct. 1, 1956.

Maximum stage since 1896, 19.1 ft about June 10, 1918, from floodmarks, from information by local resident (discharge, 21,500 cfs). Flood of June 18, 1932, reached a stage of 16.0 ft (discharge, 15,000 cfs).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Two discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1308: 1940 (M), WSP 1708: 1956.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Nov. 28 to Mar. 9).

1.61	13	3.0	357
1.8	34	4.0	860
2.1	83	6.0	2,260
2.5	182	8.0	4,030

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	232	130	76	50	500	189	731	949	227	393	126
2	36	263	110	70	50	600	185	1,260	773	232	1,200	119
3	44	222	100	70	50	500	182	1,410	647	216	1,030	112
4	30	184	110	70	50	450	178	1,330	557	198	733	106
5	22	158	110	70	50	400	179	1,230	1,650	185	750	99
6	21	135	100	68	48	400	180	2,210	2,680	177	3,550	103
7	25	88	90	66	48	600	182	2,120	1,830	171	2,490	166
8	20	93	90	66	48	550	173	1,640	1,720	178	2,100	138
9	17	103	90	66	46	500	168	1,300	1,440	286	1,480	114
10	17	96	90	66	40	456	168	1,070	1,270	558	1,110	119
11	15	91	90	66	38	454	169	919	1,070	493	872	133
12	15	94	90	66	40	494	172	809	875	443	689	134
13	15	87	100	60	40	527	177	748	953	404	551	550
14	14	76	140	56	40	627	174	688	1,840	409	450	444
15	13	74	130	56	42	728	172	619	1,500	375	369	304
16	14	75	120	54	43	725	199	560	1,060	308	314	246
17	13	124	120	54	43	735	201	516	840	839	271	206
18	20	348	130	60	44	640	206	493	713	1,930	233	183
19	18	534	140	60	44	547	206	474	630	1,880	206	173
20	16	503	150	62	45	489	200	440	568	1,500	183	185
21	22	406	140	60	45	397	215	411	502	1,120	179	167
22	21	324	130	60	45	345	253	388	448	832	160	147
23	27	289	130	60	45	288	316	370	401	638	146	140
24	20	268	130	60	47	242	334	376	360	515	140	137
25	17	246	120	60	50	220	313	392	332	481	160	182
26	18	237	120	58	52	208	286	418	307	415	304	851
27	51	232	120	56	55	219	271	766	290	336	249	1,150
28	47	210	110	54	100	210	296	989	286	303	204	1,130
29	62	184	80	52	400	207	348	1,250	268	275	172	1,330
30	119	160	80	50	------	202	438	1,430	245	250	147	989
31	183	------	80	50	------	193	------	1,160	------	224	135	------
TOTAL	1,000	6,136	3,470	1,902	1,738	13,653	6,730	28,517	27,004	16,398	20,970	9,983
MEAN	32.3	205	112	61.4	59.9	440	224	920	900	529	676	333
MAX	183	534	150	76	400	735	438	2,210	2,680	1,930	3,550	1,330
MIN	13	74	80	50	38	193	168	370	245	171	135	99
CFSM	.04	.24	.13	.07	.07	.52	.27	1.09	1.07	.63	.80	.39
IN.	.04	.27	.15	.08	.08	.60	.30	1.26	1.19	.72	.92	.44
AC-FT	1,980	12,170	6,880	3,770	3,450	27,080	13,350	56,560	53,560	32,530	41,590	19,800

CAL YR 1971 TOTAL 148,732 MEAN 407 MAX 4,200 MIN 13 CFSM .48 IN 6.56 AC-FT 295,000
WTR YR 1972 TOTAL 137,501 MEAN 376 MAX 3,550 MIN 13 CFSM .45 IN 6.06 AC-FT 272,700

PEAK DISCHARGE (BASE, 2,200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-6	1830	6.11	2,350	8-6	0415	7.70	3,730
6-6	0315	6.85	2,960				

05481300 DES MOINES RIVER NEAR STRATFORD, IOWA

LOCATION.--Lat 42°15'04", long 93°59'52", in NW1/4 NE1/4 sec.21, T.86 N., R.27 W., Webster County, on right bank 6 ft downstream from bridge on State Highway 175, 0.1 mile downstream from Skillet Creek, 4.0 miles southwest of Stratford, 7.3 miles downstream from Boone River and at mile 276.7.

DRAINAGE AREA.--5,452 sq mi.

PERIOD OF RECORD.--April 1920 to current year in reports of Geological Survey. Published as "near Boone" 1920-67. Monthly discharge only for some periods, published in WSP 1308. December 1904 to April 1920 (fragmentary gage heights during high-water periods only) in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 894.00 ft above mean sea level. Prior to May 1, 1920, nonrecording gage 16.6 miles downstream at datum 23.49 ft lower. Oct. 9, 1924, to Jan. 10, 1933, nonrecording gage 17.6 miles downstream at datum 28.53 ft lower. Jan. 11, 1933, to Sept. 30, 1934, nonrecording gage 17.9 miles downstream at datum 22.25 ft lower. Oct. 1, 1934 to Feb. 6, 1935, nonrecording gage and Feb. 7, 1935 to Sept. 30, 1967, water-stage recorder 17.9 miles downstream at datum 21.84 ft lower.

AVERAGE DISCHARGE.--52 years, 1,695 cfs (4.22 inches per year, 1,228,000 acre-ft per year); median of yearly mean discharges, 1,450 cfs (3.6 inches per year, 1,051,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 15,000 cfs Aug. 7 (gage height, 16.30 ft); minimum daily, 91 cfs Oct. 17.

Period of record: Maximum discharge, 57,400 cfs June 22, 1954 (gage height, 25.35 ft, from graph based on hourly gage readings, site and datum then in use); no flow for a short time on Jan. 9, 25, 1938, caused by manipulation of gates in control dam (site then in use); minimum daily discharge, 17 cfs Jan. 28, 1940 (unaffected by gate operation, site then in use).

Flood of May 30, 1903, reached a stage of 25.4 ft, from high-water mark, site and datum then in use (discharge, 43,600 cfs). Flood of June 22, 1954, reached a stage of 29.7 ft, from floodmark, present site and datum (discharge, 54,200 cfs).

REMARKS.--Records good except those for winter period, which are poor. Occasional minor regulation caused by dam at Fort Dodge. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1925-27, 1934. WSP 1708: 1955.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	193	839	800	380	210	1,500	1,320	3,740	4,520	1,600	3,270	757
2	191	1,280	700	400	210	1,600	1,260	5,070	3,940	1,700	8,220	735
3	163	1,100	700	340	200	1,400	1,220	6,180	3,550	1,620	6,440	679
4	157	944	800	350	200	1,300	1,210	6,400	3,300	1,490	4,690	643
5	190	800	820	330	200	1,200	1,130	6,160	3,820	1,370	3,750	613
6	154	740	840	320	200	1,400	1,070	7,810	7,070	1,240	11,800	599
7	141	584	830	320	200	2,000	1,050	8,570	5,890	1,240	13,500	932
8	171	494	800	310	200	1,900	1,010	7,370	5,280	1,200	10,800	873
9	157	519	750	300	200	1,800	960	6,380	4,890	1,460	8,730	776
10	103	534	700	310	200	1,900	946	5,670	4,470	1,530	6,630	814
11	119	591	650	320	200	2,000	946	5,160	4,250	1,710	5,200	1,020
12	169	512	540	320	200	2,100	925	4,720	4,070	1,620	4,170	995
13	123	481	250	320	200	2,100	932	4,510	4,300	1,590	3,480	1,700
14	127	417	400	290	190	2,400	932	4,350	6,050	1,820	2,970	2,250
15	103	419	500	270	210	2,690	899	4,060	5,790	2,050	2,520	1,670
16	105	460	550	260	210	3,330	960	3,770	4,750	1,980	2,160	1,360
17	91	550	450	260	210	3,300	1,020	3,600	4,050	3,460	1,870	1,150
18	102	782	420	260	200	3,170	988	3,460	3,460	7,650	1,610	981
19	164	1,230	450	270	200	2,860	981	3,280	3,180	7,670	1,410	873
20	157	1,510	520	270	210	2,760	967	3,200	2,880	6,260	1,240	802
21	165	1,460	560	270	210	2,750	988	3,010	2,620	4,980	1,140	776
22	190	1,310	580	260	210	2,870	1,120	2,880	2,390	4,340	1,040	736
23	182	1,180	560	260	210	2,660	1,230	2,700	2,200	3,980	949	694
24	152	1,080	540	260	220	2,300	1,410	2,590	1,970	3,500	884	670
25	169	1,010	530	250	240	2,120	1,470	2,460	1,910	3,220	893	694
26	166	903	540	250	250	1,920	1,450	2,560	1,790	2,980	1,230	2,280
27	230	963	530	240	260	1,780	1,440	3,770	1,660	2,530	1,240	4,380
28	293	889	520	230	300	1,720	1,590	4,330	1,590	2,250	1,090	4,470
29	296	956	490	220	600	1,590	2,080	5,190	1,500	2,150	967	4,650
30	396	992	470	210	------	1,480	3,060	6,220	1,470	2,060	869	4,030
31	566	------	430	210	------	1,410	------	5,330	------	1,900	797	------
TOTAL	5,685	25,529	18,220	8,860	6,550	65,310	36,564	144,500	108,610	84,150	115,559	43,602
MEAN	183	851	588	286	226	2,107	1,219	4,661	3,620	2,715	3,728	1,453
MAX	566	1,510	840	400	600	3,330	3,060	8,570	7,070	7,670	13,500	4,650
MIN	91	417	250	210	190	1,200	899	2,460	1,470	1,200	797	599
CFSM	.03	.16	.11	.05	.04	.39	.22	.85	.66	.50	.68	.27
IN.	.04	.17	.12	.06	.04	.45	.25	.99	.74	.57	.79	.30
AC-FT	11,280	50,640	36,140	17,570	12,990	129,500	72,520	286,600	215,400	166,900	229,200	86,480

CAL YR 1971 TOTAL 821,683 MEAN 2,251 MAX 14,100 MIN 91 CFSM .41 IN 5.61 AC-FT 1,630,000
WTR YR 1972 TOTAL 663,139 MEAN 1,812 MAX 13,500 MIN 91 CFSM .33 IN 4.52 AC-FT 1,315,000

PEAK DISCHARGE (BASE, 7,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-6	2330	12.72	9,020	8-2	0800	12.34	8,630
6-6	0945	11.50	7,340	8-7	0030	16.30	15,000
7-18	2230	12.10	8,280				

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA

LOCATION.--Lat 41°40'50", long 93°40'07", near center of sec.5, T.79 N., R.24 W., Polk County, near center of span on downstream side of bridge on county highway F42, 2.0 miles west of Saylorville, 2.1 miles downstream from Rock Creek, 2.4 miles upstream from Beaver Creek, and at mile 211.6.

DRAINAGE AREA.--5,841 sq mi.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 787.42 ft above mean sea level (levels by Corps of Engineers). Prior to Aug. 6, 1970, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--11 years, 2,386 cfs (5.55 inches per year, 1,729,000 acre-ft per year); median of yearly mean discharges, 1,950 cfs (4.5 inches per year, 1,410,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,300 cfs Aug. 8 (gage height, 16.00 ft); minimum daily, 153 cfs Oct. 18.

Period of record: Maximum discharge, 47,400 cfs Apr. 10, 1965 (gage height, 24.02 ft); minimum daily, 44 cfs Jan. 10, 1968.

Maximum stage since at least 1893, 24.5 ft June 24, 1954, from floodmarks (discharge, 60,000 cfs).

REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical analyses, water temperatures, and suspended-sediment discharge for the current year are published in Part 2 of this report.

COOPERATION.--Seven discharge measurements furnished by Corps of Engineers.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	437	833	450	220	1,200	1,720	3,020	5,820	1,820	2,440	1,080
2	206	667	743	420	220	1,600	1,630	3,710	4,920	1,870	4,700	1,030
3	215	976	716	400	215	1,700	1,540	4,910	4,350	1,970	8,180	981
4	202	1,050	716	390	215	1,500	1,510	5,970	3,970	1,960	6,730	945
5	199	926	824	380	210	1,400	1,500	6,170	3,800	1,860	4,670	893
6	176	812	844	370	210	1,300	1,430	6,300	4,400	1,750	4,650	852
7	189	727	855	360	210	1,500	1,380	7,990	6,640	1,670	9,390	839
8	191	647	871	350	205	1,900	1,340	8,730	6,040	1,620	11,700	1,030
9	191	583	856	340	200	2,000	1,310	7,590	5,420	1,600	11,700	1,130
10	203	520	795	340	205	1,880	1,260	6,580	5,080	1,750	9,500	1,120
11	217	510	747	330	205	2,090	1,240	5,910	4,690	1,830	7,090	1,120
12	196	565	671	330	205	2,060	1,230	5,420	4,500	2,060	5,650	1,340
13	184	519	560	320	210	2,200	1,200	5,090	4,410	2,070	4,650	1,470
14	196	508	400	320	210	2,120	1,180	4,860	4,990	1,990	3,930	1,600
15	176	478	450	320	215	2,800	1,170	4,650	6,700	2,110	3,470	2,350
16	166	446	560	320	220	2,810	1,190	4,380	6,220	2,380	2,950	2,010
17	161	447	600	320	220	3,460	1,240	4,110	5,270	2,360	2,590	1,680
18	153	490	500	310	220	3,480	1,270	3,920	4,380	3,200	2,290	1,480
19	160	558	450	310	220	3,240	1,260	3,760	3,740	6,880	2,080	1,340
20	154	800	470	300	220	3,000	1,230	3,610	3,590	7,320	1,870	1,250
21	191	1,110	560	300	220	2,860	1,230	3,520	3,280	6,180	1,710	1,050
22	210	1,260	600	290	230	2,860	1,220	3,370	3,000	5,140	1,590	898
23	204	1,220	620	290	230	2,880	1,280	3,240	2,770	4,540	1,500	855
24	207	1,130	600	280	230	2,790	1,350	3,150	2,590	4,280	1,360	810
25	211	1,020	580	280	250	2,950	1,480	3,000	2,390	3,820	1,310	776
26	208	986	560	270	260	2,360	1,570	2,850	2,250	3,480	1,280	800
27	215	899	540	260	280	2,220	1,590	3,640	2,170	3,300	1,350	1,770
28	234	864	530	250	350	2,100	1,660	4,240	2,080	3,000	1,520	3,890
29	274	857	520	240	700	2,020	1,820	5,180	1,990	2,710	1,460	4,130
30	321	858	500	230	------	1,900	2,110	5,710	1,890	2,560	1,300	4,260
31	364	------	480	220	------	1,800	------	6,370	------	2,440	1,180	------
TOTAL	6,375	22,870	19,551	9,890	7,005	69,580	42,140	150,950	123,340	91,500	125,790	44,779
MEAN	206	762	631	319	242	2,245	1,405	4,869	4,111	2,952	4,058	1,493
MAX	364	1,260	871	450	700	3,480	2,110	8,730	6,700	7,320	11,700	4,260
MIN	153	437	400	220	200	1,200	1,170	2,850	1,890	1,600	1,180	776
CFSM	.04	.13	.11	.05	.04	.38	.24	.83	.70	.51	.69	.26
IN.	.04	.15	.12	.06	.04	.44	.27	.96	.79	.58	.80	.29
AC-FT	12,640	45,360	38,780	19,620	13,890	138,000	83,580	299,400	244,600	181,500	249,500	88,820

CAL YR 1971 TOTAL 897,071 MEAN 2,458 MAX 13,800 MIN 153 CFSM .42 IN 5.71 AC-FT 1,779,000
WTR YR 1972 TOTAL 713,770 MEAN 1,950 MAX 11,700 MIN 153 CFSM .33 IN 4.55 AC-FT 1,416,000

PEAK DISCHARGE (BASE, 8,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	2400	11.61	8,960	8-8	2330	16.00	12,300
8-3	1130	13.40	8,460				

05481950 BEAVER CREEK NEAR GRIMES, IOWA

LOCATION.--Lat 41°41'18", long 93°44'08", 200 ft east of southwest corner of sec.31, T.80 N., R.25 W., Polk County, on right bank 6 ft upstream from bridge on Northwest 70th Avenue, 0.5 mile downstream from Little Beaver Creek, 2.5 miles east of Grimes and 6 miles upstream from mouth.
DRAINAGE AREA.--358 sq mi.
PERIOD OF RECORD.--April 1960 to current year.
GAGE.--Water-stage recorder and concrete and steel sheeting broad-crested control. Datum of gage is 806.98 ft above mean sea level. Prior to Aug. 31, 1966, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--12 years, 159 cfs (6.03 inches per year, 115,200 acre-ft per year); median of yearly mean discharges, 120 cfs (4.6 inches per year, 86,900 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,080 cfs Aug. 4 (gage height, 8.70 ft); no flow Oct. 7-17.
Period of record: Maximum discharge, 5,480 cfs May 26, 1960 (gage height, 14.05 ft); no flow Sept. 8, 11-13, 1970, Sept. 17, 18, Oct. 7-17, 1971.
REMARKS.--Records good except those for winter period, which are poor.
COOPERATION.--Four discharge measurements furnished by Corps of Engineers.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Mar. 25-30, May 6-11, May 30 to June 3, June 14-16, 19, 20, Aug. 2 to Sept. 30; stage-discharge relation affected by ice Dec. 12, Dec. 28 to Mar. 9).

4.9	0	5.3	17	6.0	270
5.0	.95	5.4	36	6.5	465
5.1	3.0	5.5	63	8.0	860
5.2	7.4	5.7	135	9.0	1,110

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	60	8.7	6.0	.50	380	57	85	466	126	163	17
2	.20	30	11	5.8	.50	220	51	89	347	114	720	16
3	.10	18	10	4.5	.50	110	50	98	280	106	875	12
4	.02	12	12	2.5	.40	65	44	101	230	86	1,050	8.4
5	.05	8.0	12	1.5	.40	55	43	96	197	79	832	5.3
6	.01	5.8	14	1.8	.40	50	43	244	184	77	765	3.5
7	0	5.0	14	2.1	.40	180	40	443	211	70	863	4.4
8	0	3.7	13	2.5	.40	500	33	619	184	69	778	1.3
9	0	6.2	11	2.8	.40	450	31	506	160	63	615	.37
10	0	6.6	11	3.0	.50	369	38	395	135	61	513	75
11	0	6.0	9.7	2.7	.70	265	38	316	117	54	422	133
12	0	4.8	9.0	2.2	.90	261	33	260	107	54	355	180
13	0	5.3	7.6	1.7	1.2	256	31	234	219	86	298	361
14	0	6.0	9.3	1.2	1.4	202	28	249	591	100	255	302
15	0	5.7	12	.90	.90	176	29	254	748	62	213	241
16	0	5.5	12	1.2	1.1	172	35	226	705	61	176	176
17	0	6.7	8.8	1.4	1.2	153	41	202	499	77	149	135
18	.04	11	11	1.6	.90	127	53	205	472	105	121	118
19	.25	12	11	1.3	.80	114	60	173	631	211	109	101
20	.49	19	11	1.0	1.5	105	60	147	506	161	97	85
21	1.4	17	9.6	1.0	1.3	92	60	131	382	125	89	69
22	1.4	11	9.6	1.1	1.0	86	60	122	319	100	79	49
23	1.3	12	11	1.0	1.4	78	57	110	276	78	71	42
24	1.3	12	12	.70	1.2	74	53	108	241	98	63	41
25	1.3	12	12	.50	1.0	71	48	102	213	174	70	34
26	1.3	12	11	.40	1.5	65	44	96	190	236	72	42
27	2.5	13	7.2	.40	10	65	41	391	171	448	62	83
28	6.0	14	5.0	.30	100	71	48	398	154	272	49	203
29	14	9.7	5.4	.40	150	64	76	492	144	181	46	188
30	30	9.6	5.8	.45	------	63	77	612	133	122	40	190
31	41	------	6.0	.50	------	58	------	622	------	87	25	------
TOTAL	102.86	359.6	312.7	54.40	282.40	4,997	1,402	8,126	9,212	3,743	10,035	2,876.27
MEAN	3.32	12.0	10.1	1.75	9.74	161	46.7	262	307	121	324	95.9
MAX	41	60	14	6.0	150	500	77	622	748	448	1,050	361
MIN	0	3.7	5.0	.30	.40	50	28	85	107	54	25	.37
CFSM	.009	.03	.03	.005	.03	.45	.13	.73	.86	.34	.91	.27
IN.	.01	.04	.03	.005	.03	.52	.15	.84	.96	.39	1.04	.30
AC-FT	204	713	620	108	560	9,910	2,780	16,120	18,270	7,420	19,900	5,710

CAL YR 1971 TOTAL 40,027.53 MEAN 110 MAX 1,800 MIN 0 CFSM .31 IN 4.16 AC-FT 79,390
WTR YR 1972 TOTAL 41,503.23 MEAN 113 MAX 1,050 MIN 0 CFSM .32 IN 4.31 AC-FT 82,320

PEAK DISCHARGE (BASE, 1,500 CFS).--No peak above base.

05482140 STORM LAKE AT STORM LAKE, IOWA

LOCATION.--(revised) Lat 42°37'27", long 95°10'30", in NW1/4 SE1/4 sec.11, T.90 N., R.37 W., Buena Vista County, about 300 ft south of swimming beach in Storm Lake State Park, 0.5 mile southeast of park entrance at intersection of U.S. Highway 71 and Memorial Drive and 1.3 miles upstream from lake outlet.
DRAINAGE AREA.--28.3 sq mi.
PERIOD OF RECORD.--April 1970 to current year.
GAGE.--Recording gage. Datum of gage is 1,384.32 ft above mean sea level. Prior to Dec. 3, 1971, nonrecording gage at site 3 miles upstream at west side of lake at datum 6.89 ft higher.
EXTREMES.--Current year: Maximum gage height, 14.54 ft June 27; minimum observed, 6.59 ft Nov. 10 (site and datum then in use).

Period of record: Maximum gage height observed, 8.51 ft June 8, 1971 (site and datum then in use); minimum observed, 6.00 ft Oct. 2, 1970 (site and datum then in use).
REMARKS.--Lake is formed by concrete dam with ungated spillway at elevation 1,398.56 ft above mean sea level. Lake is used for conservation and recreation. Area of lake is approximately 3,000 acres.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				13.65	13.54	13.61	13.81	14.16	14.30	14.19	14.37	14.25
2				13.65	13.57	13.63	13.79	14.15	14.28	14.21	14.37	14.24
3			13.63	13.65	13.57	13.63	13.80	14.16	14.28	14.21	14.34	14.23
4		6.66	13.64	13.65	13.56	13.65	13.81	14.18	14.28	14.19	14.32	14.22
5			13.64	13.64	13.55	13.64	13.79	14.19	14.29	14.17	14.35	14.21
6			13.64	13.64	13.55	13.65	13.77	14.27	14.28	14.18	14.45	14.22
7			13.64	13.64	13.54	13.71	13.74	14.26	14.36	14.17	14.41	14.23
8			13.65	13.64	13.55	13.72	13.75	14.27	14.44	14.17	14.45	14.23
9			13.65	13.64	13.56	13.72	13.76	14.27	14.41	14.15	14.43	14.21
10		6.59	13.65	13.64	13.58	13.72	13.75	14.27	14.36	14.15	14.42	14.23
11			13.65	13.63	13.57	13.72	13.74	14.26	14.37	14.15	14.41	14.25
12			13.64	13.64	13.57	13.74	13.75	14.31	14.37	14.20	14.39	14.29
13			13.64	13.62	13.57	13.75	13.77	14.40	14.36	14.21	14.39	14.31
14			13.64	13.61	13.57	13.75	13.72	14.41	14.36	14.21	14.38	14.30
15			13.64	13.60	13.58	13.75	13.75	14.40	14.35	14.20	14.37	14.30
16			13.64	13.60	13.58	13.76	13.77	14.41	14.32	14.20	14.36	14.29
17			13.63	13.59	13.59	13.76	13.79	14.41	14.32	14.35	14.33	14.26
18			13.63	13.59	13.57	13.77	13.74	14.39	14.34	14.39	14.31	14.25
19			13.63	13.58	13.56	13.77	13.74	14.37	14.34	14.38	14.29	14.25
20			13.63	13.58	13.56	13.77	13.71	14.36	14.35	14.39	14.27	14.26
21			13.63	13.58	13.56	13.82	13.83	14.35	14.30	14.39	14.27	14.24
22			13.62	13.58	13.56	13.83	13.84	14.32	14.28	14.38	14.24	14.20
23			13.62		13.55	13.80	13.85	14.34	14.26	14.35	14.20	14.18
24			13.62		13.55	13.79	13.78	14.35	14.25	14.40	14.20	14.18
25			13.62	13.57	13.55	13.82	13.77	14.35	14.24	14.39	14.24	14.31
26			13.61		13.55	13.76	13.74	14.35	14.22	14.40	14.28	14.35
27			13.61		13.55	13.82	13.77	14.35	14.22	14.37	14.27	14.33
28			13.60		13.55	13.85	13.86	14.36	14.25	14.35	14.26	14.35
29			13.61	13.56	13.58	13.83	13.91	14.35	14.21	14.35	14.25	14.34
30			13.65	13.56	------	13.83	13.95	14.32	14.19	14.34	14.25	14.34
31		------	13.65	13.55	------	13.82	------	14.31	------	14.31	14.26	------
MEAN				11.42	13.56	13.75	13.79	14.31	14.31	14.27	14.33	14.26
MAX				13.65	13.59	13.85	13.95	14.41	14.44	14.40	14.45	14.35
MIN					13.54	13.61	13.71	14.15	14.19	14.15	14.20	14.18

05482170 BIG CEDAR CREEK NEAR VARINA, IOWA

LOCATION.--Lat 42°41'16", long 94°47'52", in NE1/4 NE1/4 sec.24, T.91 N., R.34 W., Pocahontas County, on left bank 5 ft downstream from bridge on county highway N33, 2.0 miles downstream from Drainage ditch 21, 3.5 miles upstream from Drainage ditch 74, and 5.5 miles northeast of Varina.

DRAINAGE AREA.--80.0 sq mi.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,225.12 ft above mean sea level.

AVERAGE DISCHARGE.--13 years, 30.9 cfs (5.25 inches per year, 22,390 acre-ft per year); median of yearly mean discharges, 24 cfs (4.1 inches per year, 17,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 400 cfs Aug. 6 (gage height, 7.37 ft); no flow Feb. 4-26.
Period of record: Maximum discharge, 2,080 cfs Aug. 31, 1962 (gage height, 13.68 ft); maximum gage height, 15.05 ft Apr. 6, 1965 (backwater from ice); no flow at times in 1964, 1967, 1968, 1972.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Nov. 5, Nov. 8, 11-20, Aug. 6, Sept. 26; stage-discharge relation affected by ice Nov. 6, 7, 9, 10, Nov. 21 to Mar. 18).

2.58	6.1	4.0	70
2.6	6.5	5.0	149
3.0	19	6.0	256
3.5	41	7.0	390

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.73	8.5	3.8	1.1	.13	.16	6.9	203	26	10	18	7.8
2	.65	6.2	3.7	1.0	.12	.21	6.6	201	24	11	19	7.4
3	.65	4.5	3.5	.95	.10	.40	6.8	143	23	10	15	6.7
4	.51	3.6	3.3	.88	0	.80	6.6	107	21	9.3	13	6.6
5	.51	3.3	3.1	.84	0	4.0	6.5	94	26	9.1	16	6.1
6	.51	2.6	2.9	.81	0	100	7.2	115	27	9.4	349	8.0
7	.51	2.1	2.8	.78	0	124	7.1	103	26	8.9	272	16
8	1.1	2.7	2.7	.75	0	148	6.4	85	29	8.9	259	15
9	.90	2.8	2.8	.74	0	142	6.4	71	30	8.8	189	13
10	.54	2.5	2.9	.72	0	136	6.7	62	25	7.5	117	12
11	.56	2.3	3.0	.70	0	128	7.0	56	23	7.2	84	12
12	.52	2.2	3.0	.67	0	126	7.8	53	22	39	61	11
13	.58	2.2	3.0	.65	0	120	8.0	55	24	56	48	12
14	.52	2.1	2.9	.62	0	110	7.5	50	21	46	38	12
15	.52	2.1	2.7	.60	0	98	7.3	47	18	48	30	12
16	.51	2.5	2.5	.57	0	76	7.9	46	17	30	24	11
17	.54	4.5	2.3	.54	0	48	7.1	44	17	72	20	10
18	.80	8.5	2.1	.50	0	28	8.0	40	16	111	17	8.1
19	2.1	7.4	2.0	.47	0	17	7.8	36	16	57	15	7.0
20	1.3	6.6	1.8	.43	0	16	7.7	34	18	39	14	7.3
21	2.1	5.0	1.7	.39	0	16	12	32	17	31	13	7.0
22	1.4	4.1	1.6	.36	0	16	14	31	15	24	12	6.3
23	.98	4.5	1.5	.33	0	12	13	30	14	20	11	6.3
24	.91	4.2	1.4	.31	0	11	13	29	13	18	10	6.5
25	.80	3.8	1.4	.28	0	9.1	12	27	13	15	11	243
26	.77	4.0	1.4	.25	0	8.7	11	25	12	15	12	360
27	5.0	3.9	1.3	.22	.10	8.7	13	25	12	14	11	216
28	4.0	3.6	1.3	.20	.12	8.4	93	41	13	13	9.9	139
29	4.7	3.4	1.2	.18	.13	7.4	105	42	12	12	8.9	99
30	15	3.8	1.2	.16	------	7.2	89	32	11	11	8.0	81
31	17	------	1.1	.15	------	7.3	------	28	------	9.9	8.6	------
TOTAL	67.22	119.5	71.9	17.15	.70	1,534.37	518.3	1,987	581	781.0	1,733.4	1,365.1
MEAN	2.17	3.98	2.32	.55	.024	49.5	17.3	64.1	19.4	25.2	55.9	45.5
MAX	17	8.5	3.8	1.1	.13	148	105	203	30	111	349	360
MIN	.51	2.1	1.1	.15	0	.16	6.4	25	11	7.2	8.0	6.1
CFSM	.03	.05	.03	.007	.0003	.62	.22	.80	.24	.32	.70	.57
IN.	.03	.06	.03	.007	0	.71	.24	.92	.27	.36	.81	.63
AC-FT	133	237	143	34	1.4	3,040	1,030	3,940	1,150	1,550	3,440	2,710

CAL YR 1971 TOTAL 13,691.59 MEAN 37.5 MAX 798 MIN .39 CFSM .47 IN 6.37 AC-FT 27,160
WTR YR 1972 TOTAL 8,776.64 MEAN 24.0 MAX 360 MIN 0 CFSM .30 IN 4.08 AC-FT 17,410

PEAK DISCHARGE (BASE, 400 CFS).--Aug. 6 (1415) 400 cfs (7.37 ft).

05482300 NORTH RACCOON RIVER NEAR SAC CITY, IOWA

LOCATION.--Lat 42°20'28", long 94°59'05", in NE1/4 NW1/4 sec.24, T.87 N., R.36 W., Sac County, on right bank 15 ft downstream from bridge on county highway, 0.2 mile upstream from Indian Creek, 0.9 mile downstream from Drainage ditch 73, and 5.6 miles south of Sac City.

DRAINAGE AREA.--713 sq mi.

PERIOD OF RECORD.--June 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,144.60 ft above mean sea level (levels by Iowa Natural Resources Council).

AVERAGE DISCHARGE.--14 years, 252 cfs (4.80 inches per year, 182,600 acre-ft per year); median of yearly mean discharges, 220 cfs (4.2 inches per year, 159,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,140 cfs July 17 (gage height, 13.43 ft); minimum daily, 8.3 cfs Oct. 10.

Period of record: Maximum discharge, 10,800 cfs Sept. 1, 1962 (gage height, 18.12 ft); minimum daily, 1.0 cfs Jan. 25 to Feb. 5, 1959.

Flood of June 21, 1954, reached a stage of 15.61 ft, from floodmark (discharge, 7,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Mar. 18 to May 2, June 15-27, June 29 to July 5-12, July 22 to Aug. 5, Sept. 15-25; stage-discharge relation affected by ice Nov. 22 to Mar. 17).

1.98	8.2	4.0	253
2.0	9.3	6.0	720
2.2	22	9.0	1,720
2.4	38	12.0	3,180
3.0	100	13.0	3,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	167	62	11	16	570	85	1,050	264	167	248	105
2	17	120	59	11	16	470	81	1,570	250	189	635	101
3	17	93	56	11	16	440	85	1,320	244	652	546	95
4	13	72	53	11	16	440	83	1,050	226	364	413	91
5	12	63	55	11	16	420	81	947	314	250	322	89
6	11	55	57	11	16	400	84	1,050	295	206	643	87
7	9.9	54	55	12	16	700	85	1,160	420	183	1,510	109
8	9.0	45	53	12	16	640	81	954	1,240	158	1,380	228
9	8.4	51	57	12	16	590	78	798	1,020	138	1,460	178
10	8.3	57	59	12	16	530	81	682	696	123	1,050	163
11	9.8	50	63	12	16	490	80	606	516	110	784	431
12	10	46	74	12	16	440	79	562	446	125	620	772
13	9.8	42	75	12	16	390	79	617	1,160	484	500	817
14	9.9	39	65	12	16	370	78	734	848	598	424	563
15	9.1	37	56	12	17	300	74	710	594	576	348	427
16	9.2	39	52	12	17	250	75	627	427	531	291	341
17	8.4	52	48	12	17	210	70	591	372	2,510	251	286
18	15	70	44	13	18	175	68	603	391	3,370	212	235
19	15	86	40	13	18	149	67	514	361	2,220	186	203
20	17	90	37	13	18	137	66	450	321	1,430	163	185
21	26	81	33	14	19	133	83	409	285	1,120	148	171
22	22	61	30	14	20	143	108	378	248	845	133	157
23	18	59	27	15	20	141	132	367	222	641	123	148
24	19	68	24	15	21	119	125	369	202	577	116	146
25	16	64	22	15	22	108	110	362	188	536	132	252
26	15	62	20	15	23	101	104	349	175	420	145	1,670
27	30	59	18	15	25	101	114	361	270	349	147	1,630
28	45	59	16	15	27	99	351	344	484	299	129	1,130
29	86	56	15	15	60	95	730	342	273	273	115	863
30	149	54	13	15	------	89	729	320	201	245	104	687
31	194	------	12	16	------	87	------	283	------	216	104	------
TOTAL	853.8	1,951	1,350	401	566	9,327	4,146	20,479	12,953	19,905	13,382	12,360
MEAN	27.5	65.0	43.5	12.9	19.5	301	138	661	432	642	432	412
MAX	194	167	75	16	60	700	730	1,570	1,240	3,370	1,510	1,670
MIN	8.3	37	12	11	16	87	66	283	175	110	104	87
CFSM	.04	.09	.06	.02	.03	.42	.19	.93	.61	.90	.61	.58
IN.	.04	.10	.07	.02	.03	.49	.22	1.07	.68	1.04	.70	.64
AC-FT	1,690	3,870	2,680	795	1,120	18,500	8,220	40,620	25,690	39,480	26,540	24,520

CAL YR 1971 TOTAL 106,772.6 MEAN 293 MAX 3,840 MIN 8.3 CFSM .41 IN 5.57 AC-FT 211,800
WTR YR 1972 TOTAL 97,673.8 MEAN 267 MAX 3,370 MIN 8.3 CFSM .37 IN 5.10 AC-FT 193,700

PEAK DISCHARGE (BASE, 2,000 CFS).--July 17 (2230) 4,140 cfs (13.43 ft).

05482315 BLACKHAWK LAKE AT LAKE VIEW, IOWA

LOCATION.--Lat 42°18'15", long 95°02'30", in NW1/4 SE1/4 sec.33, T.87 N., R.36 W., Sac County, on south shore across from swimming beach at Lake View and 2 miles upstream from lake outlet.

DRAINAGE AREA.--23.3 sq mi.

PERIOD OF RECORD.--April 1970 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,218.50 ft above mean sea level and 2.00 ft below crest of spillway of dam at outlet. Prior to June 25, 1970, nonrecording gage at lake outlet.

EXTREMES.--Current year: Maximum gage height, 3.44 ft July 19; minimum, 0.59 ft Oct. 27.

Period of record: Maximum gage height, 3.45 ft Feb. 20, 1971; minimum, 0.59 ft Oct. 27, 1971.

REMARKS.--Lake is formed by concrete dam with ungated overflow spillway at elevation 1,220.50 ft above mean sea level. Lake is used for conservation and recreation. Area of lake is approximately 957 acres.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	1.15	1.16	1.24	1.24	1.36	2.18	2.50	2.48	2.75	2.74	2.31
2	.84	1.14	1.16	1.24	1.25	1.48	2.20	2.52	2.46	2.75	2.76	2.31
3	.80	1.12	1.16	1.23	1.25	1.59	2.17	2.57	2.47	2.73	2.74	2.30
4	.80	1.14	1.16	1.23	1.25	1.63	2.19	2.59	2.47	2.69	2.71	2.29
5	.75	1.10	1.17	1.23	1.25	1.64	2.20	2.61	2.49	2.67	2.68	2.28
6	.75	1.05	1.17	1.23	1.25	1.66	2.20	2.66	2.51	2.66	2.66	2.28
7	.75	1.10	1.17	1.23	1.25	1.78	2.21	2.69	2.58	2.65	2.65	2.27
8	.70	1.10	1.18	1.23	1.26	1.87	2.20	2.71	2.68	2.64	2.61	2.26
9	.70	1.09	1.19	1.23	1.27	1.92	2.18	2.71	2.72	2.63	2.59	2.26
10	.70	1.08	1.19	1.23	1.30	1.96	2.18	2.71	2.73	2.60	2.58	2.32
11	.68	1.08	1.19	1.22	1.30	1.98	2.19	2.71	2.68	2.59	2.55	2.54
12	.68	1.08	1.19	1.22	1.30	2.01	2.18	2.70	2.66	2.59	2.54	2.67
13	.66	1.12	1.18	1.21	1.30	2.04	2.16	2.71	2.73	2.58	2.52	2.74
14	.65	1.05	1.18	1.21	1.30	2.06	2.17	2.69	2.80	2.56	2.50	2.78
15	.65	1.09	1.19	1.21	1.30	2.07	2.17	2.68	2.82	2.55	2.48	2.78
16	.67	1.09	1.19	1.20	1.30	2.09	2.17	2.66	2.82	2.53	2.45	2.77
17	.67	1.14	1.20	1.20	1.31	2.11	2.18	2.64	2.86	2.90	2.42	2.75
18	.73	1.12	1.20	1.20	1.30	2.12	2.16	2.61	2.91	3.31	2.40	2.74
19	.69	1.12	1.20	1.20	1.30	2.13	2.17	2.59	2.94	3.41	2.38	2.74
20	.70	1.10	1.20	1.20	1.30	2.13	2.19	2.56	2.89	3.39	2.36	2.71
21	.72	1.12	1.20	1.20	1.29	2.13	2.22	2.54	2.85	3.27	2.34	2.67
22	.71	1.14	1.20	1.19	1.29	2.15	2.22	2.52	2.80	3.12	2.30	2.64
23	.71	1.13	1.19	1.22	1.29	2.17	2.19	2.54	2.76	3.00	2.29	2.62
24	.72	1.13	1.19	1.23	1.29	2.17	2.21	2.54	2.72	2.98	2.28	2.59
25	.72	1.13	1.19	1.23	1.31	2.17	2.22	2.52	2.69	2.92	2.32	2.59
26	.71	1.13	1.19	1.23	1.31	2.20	2.22	2.51	2.67	2.89	2.33	2.58
27	.77	1.14	1.18	1.24	1.31	2.20	2.25	2.53	2.67	2.83	2.33	2.58
28	.80	1.16	1.18	1.24	1.31	2.20	2.36	2.54	2.75	2.78	2.32	2.56
29	.91	1.16	1.19	1.24	1.31	2.18	2.41	2.52	2.78	2.73	2.32	2.54
30	1.07	1.16	1.23	1.24	------	2.20	2.47	2.51	2.78	2.69	2.32	2.52
31	1.12	------	1.24	1.24	------	2.18	------	2.49	------	2.65	2.32	------
MEAN	.75	1.12	1.19	1.22	1.29	1.99	2.21	2.60	2.71	2.81	2.48	2.53
MAX	1.12	1.16	1.24	1.24	1.31	2.20	2.47	2.71	2.94	3.41	2.76	2.78
MIN	.65	1.05	1.16	1.19	1.24	1.36	2.16	2.49	2.46	2.53	2.28	2.26

WTR YR 1972 MEAN 1.91 MAX 3.41 MIN .65

05482500 NORTH RACCOON RIVER NEAR JEFFERSON, IOWA

LOCATION.--Lat 41°59'17", long 94°22'36", in SW1/4 NW1/4 sec.20, T.83 N., R.30 W., Greene County, on right bank 5 ft downstream from bridge on State Highway 4, 0.1 mile downstream from Drainage ditch 33, and 40, 1.9 miles south of Jefferson, and 4.2 miles upstream from Hardin Creek.

DRAINAGE AREA.--1,619 sq mi.

PERIOD OF RECORD.--March 1940 to current year. Prior to April 1940, monthly discharge only, published in WSP 1308. Prior to October 1955, published as Raccoon River near Jefferson.

GAGE.--Water-stage recorder. Datum of gage is 967.09 ft above mean sea level. Prior to Apr. 22, 1946, nonrecording gage at site 4 miles upstream at different datum. Apr. 22 to June 25, 1946, nonrecording gage, June 26, 1946 to Sept. 30, 1955, water-stage recorder, Oct. 1, 1955 to Apr. 30, 1958, nonrecording gage, at present site and datum.

AVERAGE DISCHARGE.--32 years, 615 cfs (5.16 inches per year, 445,600 acre-ft per year); median of yearly mean discharges, 530 cfs (4.4 inches per year, 384,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,550 cfs July 20 (gage height, 12.25 ft); minimum daily, 25 cfs Oct. 15.

Period of record: Maximum discharge, 29,100 cfs June 23, 1947 (gage height, 22.3 ft); minimum daily, 0.6 cfs Oct. 5, 1956.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Two discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1940 (M), 1950-51.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 31 to Nov. 4; stage-discharge relation affected by ice Dec. 12 to Mar. 11).

3.15	25	5.0	500
3.4	50	7.0	1,420
3.8	114	10.0	3,400
4.2	216	13.0	6,350

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	246	94	28	41	560	266	1,790	749	732	728	261
2	40	284	109	27	42	565	254	1,980	692	632	1,220	261
3	38	260	115	27	43	750	239	2,490	640	560	2,200	248
4	38	208	114	27	45	660	228	2,280	600	624	2,100	237
5	39	167	112	28	46	600	225	1,900	584	758	1,670	223
6	36	138	110	28	46	630	225	2,120	612	803	1,730	213
7	34	114	108	29	46	1,200	213	2,600	754	520	1,940	204
8	33	104	111	29	45	2,250	210	2,630	973	464	2,890	277
9	32	101	98	29	45	2,060	213	2,190	1,690	416	2,980	341
10	32	97	101	30	45	1,890	188	1,820	1,650	376	2,750	392
11	35	92	101	30	45	1,600	188	1,560	1,280	349	2,260	412
12	33	92	75	31	46	1,180	188	1,390	1,050	334	1,770	807
13	32	92	86	31	47	1,110	185	1,340	1,440	334	1,450	1,860
14	28	87	95	31	48	848	185	1,340	1,670	342	1,220	2,530
15	25	82	93	30	49	1,050	180	1,400	1,890	696	1,030	2,090
16	26	82	94	30	50	1,030	194	1,370	1,400	676	878	1,580
17	26	97	132	31	52	862	185	1,210	1,280	821	756	1,260
18	28	98	132	33	52	728	174	1,130	1,290	2,580	662	1,040
19	30	100	119	33	53	596	166	1,090	1,160	4,390	588	875
20	37	111	108	34	54	492	165	983	1,040	5,310	524	757
21	42	123	93	37	57	448	177	895	925	4,180	478	680
22	41	128	100	37	56	408	188	830	834	2,690	427	627
23	40	127	84	39	57	392	213	807	749	2,070	391	583
24	40	120	76	40	59	376	234	777	688	1,780	365	550
25	41	111	70	39	61	359	254	749	632	1,500	352	533
26	39	118	63	39	62	328	243	758	584	1,540	378	660
27	47	121	50	39	62	314	242	785	556	1,380	352	1,480
28	44	117	41	40	75	306	318	844	672	1,160	334	2,250
29	64	115	36	40	86	293	797	834	1,260	988	311	1,830
30	76	111	31	40	------	285	1,510	866	935	864	290	1,490
31	119	------	28	41	------	279	------	816	------	762	273	------
TOTAL	1,253	3,843	2,779	1,027	1,515	24,449	8,247	43,574	30,279	40,631	35,297	26,551
MEAN	40.4	128	89.6	33.1	52.2	789	275	1,406	1,009	1,311	1,139	885
MAX	119	284	132	41	86	2,250	1,510	2,630	1,890	5,310	2,980	2,530
MIN	25	82	28	27	41	279	165	749	556	334	273	204
CFSM	.03	.08	.06	.02	.03	.49	.17	.87	.62	.81	.70	.55
IN.	.03	.09	.06	.02	.03	.56	.19	1.00	.70	.93	.81	.61
AC-FT	2,490	7,620	5,510	2,040	3,010	48,490	16,360	86,430	60,060	80,590	70,010	52,660

CAL YR 1971 TOTAL 204,374 MEAN 560 MAX 7,030 MIN 25 CFSM .35 IN 4.70 AC-FT 405,400
WTR YR 1972 TOTAL 219,445 MEAN 600 MAX 5,310 MIN 25 CFSM .37 IN 5.04 AC-FT 435,300

PEAK DISCHARGE (BASE, 4,000 CFS).--July 20 (2100) 5,550 cfs (12.25 ft).

05483000 EAST FORK HARDIN CREEK NEAR CHURDAN, IOWA

LOCATION.--Lat 42°06'27", long 94°22'12", in SE1/4 SW1/4 sec.5, T.84 N., R.30 W., Greene County, on left bank 35 ft upstream from bridge on county highway E26, 1.6 miles upstream from small left-bank tributary, 4.4 miles upstream from mouth, and 6.5 miles southeast of Churdan.

DRAINAGE AREA.--24.0 sq mi.

PERIOD OF RECORD.--July 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,050.90 ft above mean sea level.

AVERAGE DISCHARGE.--20 years, 7.92 cfs (4.48 inches per year, 5,740 acre-ft per year); median of yearly mean discharges, 6.8 cfs (3.8 inches per year, 4,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 195 cfs Aug. 1 (gage height, 5.72 ft); maximum gage height, 5.86 ft Mar. 6 (backwater from ice); no flow on many days.

Period of record: Maximum discharge, 413 cfs May 5, 1960 (gage height, 8.92 ft), from rating curve extended above 270 cfs; no flow at times most years.

REMARKS.--Records good except those for winter period or those below 2.0 cfs, which are poor. Small diversion for irrigation above station. Records of periodic chemical analyses for the current year are published in Part 2 of this report

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1708: 1954-55, 1957 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Mar. 13; stage-discharge relation affected by ice Nov. 26 to Mar. 11).

1.45	0	2.0	5.1
1.5	.02	2.5	17
1.6	.17	3.0	32
1.7	.75	4.0	76
1.8	1.8	5.0	139

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	1.4	.07	.01	0	40	1.5	44	12	14	62	1.3
2	0	1.7	.08	.01	0	31	1.4	31	10	11	126	1.3
3	0	.29	.10	0	0	24	1.3	24	8.7	8.7	47	1.2
4	0	.10	.12	0	0	18	1.2	19	7.6	7.7	25	1.1
5	0	.06	.14	0	0	14	1.3	17	9.9	7.2	20	1.1
6	0	.04	.17	0	0	60	1.3	120	12	7.5	67	1.0
7	0	.03	.21	0	0	85	1.1	105	11	7.0	36	1.0
8	0	.03	.20	0	0	78	.77	67	12	6.6	30	1.8
9	0	.03	.19	0	0	40	.77	45	11	7.6	25	1.3
10	0	.03	.22	0	0	39	.81	32	8.2	6.3	20	1.8
11	0	.04	.21	0	0	30	.76	25	8.2	5.8	17	6.5
12	0	.04	.18	0	0	21	.79	24	7.8	6.3	13	29
13	0	.03	.14	0	0	14	.81	44	32	6.0	11	41
14	0	.03	.26	0	0	15	.67	36	62	6.0	8.9	21
15	0	.03	.24	0	0	15	.67	28	46	4.6	7.7	14
16	0	.03	.19	0	0	10	1.3	24	30	3.9	6.9	10
17	0	.45	.13	0	0	6.6	1.3	23	27	41	6.0	7.6
18	0	.58	.09	0	0	5.0	1.3	20	31	34	5.4	5.9
19	0	.44	.09	0	0	4.3	1.3	18	26	19	4.3	5.0
20	0	.29	.09	0	0	3.5	1.2	17	20	15	3.9	4.7
21	0	.10	.10	0	.01	2.9	1.7	15	18	11	3.5	3.9
22	0	.14	.11	0	.01	2.7	1.8	14	15	8.7	3.1	3.6
23	0	.17	.15	0	.01	2.4	1.7	13	13	7.2	2.9	3.7
24	0	.19	.16	0	.01	2.2	1.6	12	11	6.1	2.6	3.6
25	0	.17	.17	0	.01	2.0	1.5	10	9.7	5.3	2.6	3.6
26	0	.15	.16	0	.03	1.8	1.5	17	8.4	6.0	2.3	12
27	0	.13	.08	0	.80	1.9	1.8	19	8.4	6.0	2.0	8.6
28	.01	.16	.05	0	3.0	1.7	9.3	16	44	5.6	1.8	8.2
29	.07	.10	.04	0	13	1.9	23	16	24	5.3	1.6	6.9
30	.62	.08	.03	0	------	2.0	19	14	18	4.5	1.4	6.7
31	.51	------	.02	0	------	1.7	------	13	------	4.1	1.4	------
TOTAL	1.21	7.06	4.19	.02	16.88	576.6	84.45	922	561.9	295.0	567.3	218.4
MEAN	.039	.24	.14	.0006	.58	18.6	2.82	29.7	18.7	9.52	18.3	7.28
MAX	.62	1.7	.26	.01	13	85	23	120	62	41	126	41
MIN	0	.03	.02	0	0	1.7	.67	10	7.6	3.9	1.4	1.0
CFSM	.002	.01	.006	0	.02	.78	.12	1.24	.78	.40	.76	.30
IN.	.001	.01	.006	0	.03	.89	.13	1.43	.87	.46	.88	.34
AC-FT	2.4	14	8.3	.04	33	1,140	168	1,830	1,110	585	1,130	433

CAL YR 1971 TOTAL 1,659.36 MEAN 4.55 MAX 150 MIN 0 CFSM .19 IN 2.57 AC-FT 3,290
WTR YR 1972 TOTAL 3,255.01 MEAN 8.89 MAX 126 MIN 0 CFSM .37 IN 5.05 AC-FT 6,460

PEAK DISCHARGE (BASE, 150 CFS).-- Mar. 6 (time unknown) about 160 cfs; Aug. 1 (2345) 195 cfs (5.72 ft).

05483600 MIDDLE RACCOON RIVER AT PANORA, IOWA

LOCATION.--Lat 41°41'14", long 94°22'15", in NE1/4 NW1/4 sec.5, T.79 N., R.30 W., Guthrie County, on left bank 15 ft downstream from bridge on county highway, 0.2 mile southwest of Panora, 1.5 miles upstream from Andy's Branch, and 1.7 miles downstream from Lake Panorama.

DRAINAGE AREA.--440 sq mi.

PERIOD OF RECORD.--June 1958 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 991.20 ft above mean sea level.

AVERAGE DISCHARGE.--14 years, 178 cfs (5.49 inches per year, 129,000 acre-ft per year); median of yearly mean discharges, 160 cfs (4.9 inches per year, 116,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 5,110 cfs Aug. 2 (gage height, 9.64 ft); minimum daily, 20 cfs Oct. 24-26, 31.

Period of record: Maximum discharge, 9,150 cfs July 2, 1958 (gage height, 11.87 ft), from rating curve extended above 5,200 cfs; maximum gage height, 12.98 ft Feb. 19, 1971 (from floodmark, backwater from ice); minimum daily discharge, 1.0 cfs June 19, 1969 (result of construction of dam at Lake Panorama); minimum daily discharge excluding construction period and operation of Lake Panorama, 10 cfs Jan. 7-13, 1968.

Flood of June 10, 1953, reached a stage of 14.3 ft, from floodmark (discharge, about 14,000 cfs).

REMARKS.--Records good except those for winter period, which are poor. City of Panora diverts approximately 100 acre-ft per year above station. Flow regulated by dam on Lake Panorama since August 1970. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 19 to Jan. 23, Jan. 27 to Feb. 13, Feb. 18, 20, 21, 23-28).

3.89	20	4.6	170
3.9	21	5.0	375
4.1	44	6.0	1,190
4.3	80	8.0	3,140

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	36	60	34	24	1,500	30	1,090	179	139	233	50
2	30	51	115	34	24	1,160	30	655	182	316	2,390	50
3	30	39	210	33	24	301	33	283	178	146	1,260	47
4	32	30	245	32	24	212	31	439	168	125	406	46
5	31	30	214	32	24	158	31	396	164	157	58	44
6	31	30	124	31	24	163	32	1,200	161	152	386	42
7	31	29	88	30	24	213	34	1,810	347	145	280	44
8	30	31	69	29	24	272	33	1,120	599	140	266	41
9	23	30	58	28	24	90	34	683	626	132	226	38
10	24	30	54	27	24	100	35	514	63	122	200	158
11	24	30	48	27	24	79	35	492	69	118	152	681
12	24	30	46	26	25	37	36	442	101	129	81	511
13	23	30	42	25	25	36	37	461	527	258	88	1,070
14	22	30	41	25	26	33	37	458	1,270	154	70	623
15	22	30	42	24	27	34	37	344	613	68	64	260
16	22	30	42	24	27	33	45	160	485	75	67	328
17	21	36	41	23	27	32	41	287	1,670	341	67	128
18	21	77	40	23	26	32	44	469	1,650	341	64	93
19	21	32	39	23	25	32	80	200	994	362	60	154
20	23	30	38	22	26	32	114	159	744	210	58	186
21	22	30	38	23	26	32	106	177	270	116	58	151
22	21	68	38	23	27	32	66	184	186	120	57	125
23	21	207	38	24	28	32	37	311	354	114	54	111
24	20	363	38	26	28	31	37	255	485	109	52	104
25	20	248	38	27	29	31	39	143	164	113	62	60
26	20	262	38	26	29	31	74	184	186	483	61	188
27	21	211	37	25	35	32	90	190	174	572	59	156
28	21	127	36	25	42	31	259	436	285	256	55	168
29	22	99	36	25	64	30	687	629	373	131	53	157
30	23	73	36	25	------	30	1,000	233	173	134	50	142
31	20	------	35	25	------	30	------	158	------	128	50	------
TOTAL	746	2,379	2,064	826	806	4,891	3,224	14,562	13,440	5,906	7,087	5,956
MEAN	24.1	79.3	66.6	26.6	27.8	158	107	470	448	191	229	199
MAX	32	363	245	34	64	1,500	1,000	1,810	1,670	572	2,390	1,070
MIN	20	29	35	22	24	30	30	143	63	68	50	38
CFSM	.05	.18	.15	.06	.06	.36	.24	1.07	1.02	.43	.52	.45
IN.	.06	.20	.17	.07	.07	.41	.27	1.23	1.14	.50	.60	.50
AC-FT	1,480	4,720	4,090	1,640	1,600	9,700	6,390	28,880	26,660	11,710	14,060	11,810

CAL YR 1971 TOTAL 60,796.3 MEAN 167 MAX 6,500 MIN 4.3 CFSM .38 IN 5.14 AC-FT 120,600
WTR YR 1972 TOTAL 61,887.0 MEAN 169 MAX 2,390 MIN 20 CFSM .38 IN 5.23 AC-FT 122,800

PEAK DISCHARGE (BASE, 2,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-1	1430	7.63	2,670	6-17	1900	8.17	3,300
5-7	1015	7.51	2,550	8-2	1415	9.64	5,110

05484000 SOUTH RACCOON RIVER AT REDFIELD, IOWA

LOCATION.--Lat 41°34'48", long 94°10'58", in SW1/4 SW1/4 sec.3, T.78 N., R.29 W., Dallas County, on left bank 10 ft downstream from bridge on county highway at Redfield, 0.8 mile downstream from bridge on U.S. Highway 6, 1.0 mile downstream from Middle Raccoon River, and 15.6 miles upstream from mouth.

DRAINAGE AREA.--988 sq mi.

PERIOD OF RECORD.--March 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 896.43 ft above mean sea level. Prior to June 12, 1946, nonrecording gage, and June 12, 1946, to Sept. 30, 1966, water-stage recorder at site 20 ft upstream at same datum.

AVERAGE DISCHARGE.--32 years, 408 cfs (5.61 inches per year, 295,600 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,410 cfs Sept. 11 (gage height, 13.95 ft); minimum daily, 36 cfs Jan. 1-4.

Period of record: Maximum discharge, 35,000 cfs July 2, 1958 (gage height, 29.04 ft, from floodmark); minimum daily, 19 cfs July 27, 1940, Nov. 30, 1955.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Three discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1940.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 25 to Nov. 21, Nov. 28 to Dec. 2, Dec. 6-9; stage-discharge relation affected by ice Nov. 22-27, Dec. 3-5, Dec. 10 to Feb. 29).

2.69	43	6.0	1,630
2.8	66	10.0	4,610
3.0	120	12.0	6,420
4.0	520		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	166	100	36	55	1,520	83	1,290	398	256	297	131
2	60	242	89	36	56	1,470	80	1,170	387	323	4,590	139
3	60	188	224	36	57	473	80	449	371	351	1,890	136
4	56	90	195	36	57	377	83	626	351	162	1,260	126
5	58	74	280	37	58	289	78	588	349	205	442	125
6	55	73	198	38	59	313	79	1,140	334	239	1,860	121
7	52	54	156	38	59	586	79	2,970	341	244	707	135
8	52	57	129	39	58	502	74	1,820	800	238	535	119
9	52	69	110	40	58	269	72	1,320	771	222	432	109
10	45	68	95	42	57	242	75	901	372	210	360	409
11	45	62	87	42	57	263	76	812	200	207	328	6,090
12	43	60	82	42	57	206	75	749	225	246	251	2,730
13	44	60	83	42	56	168	79	1,020	400	313	236	2,210
14	44	60	88	42	57	151	77	905	1,650	431	215	1,610
15	44	56	100	43	57	202	77	743	1,330	233	177	740
16	43	57	120	44	58	172	125	490	897	207	174	769
17	44	77	114	45	58	145	133	470	1,140	416	164	510
18	45	183	130	46	59	132	104	630	1,970	464	154	413
19	49	127	116	48	61	125	102	475	1,620	603	150	335
20	50	84	104	50	63	122	180	337	1,180	398	147	413
21	66	73	93	52	65	126	225	347	740	301	145	358
22	61	61	82	54	68	121	268	352	520	264	149	315
23	48	150	75	56	74	107	150	354	393	239	143	296
24	45	310	68	57	550	99	119	567	728	256	135	292
25	42	340	60	57	500	94	109	357	400	227	159	274
26	42	230	53	57	475	95	109	411	366	592	170	410
27	47	325	47	56	450	103	162	915	366	945	158	397
28	58	207	43	55	1,000	111	605	685	377	630	147	521
29	62	171	39	55	1,560	98	779	1,040	566	320	139	419
30	101	130	37	55	------	84	974	652	385	295	133	383
31	113	------	37	55	------	83	------	398	------	273	129	------
TOTAL	1,687	3,904	3,234	1,431	5,899	8,848	5,311	24,983	19,927	10,310	15,976	21,033
MEAN	54.4	130	104	46.2	203	285	177	806	664	333	515	701
MAX	113	340	280	57	1,560	1,520	974	2,970	1,970	945	4,590	6,090
MIN	42	54	37	36	55	83	72	337	200	162	129	109
CFSM	.06	.13	.11	.05	.21	.29	.18	.82	.67	.34	.52	.71
IN.	.06	.15	.12	.05	.22	.33	.20	.94	.75	.39	.60	.79
AC-FT	3,350	7,740	6,410	2,840	11,700	17,550	10,530	49,550	39,530	20,450	31,690	41,720

CAL YR 1971 TOTAL 144,618 MEAN 396 MAX 14,800 MIN 26 CFSM .40 IN 5.45 AC-FT 286,800
WTR YR 1972 TOTAL 122,543 MEAN 335 MAX 6,090 MIN 36 CFSM .34 IN 4.61 AC-FT 243,100

PEAK DISCHARGE (BASE, 5,000 CFS).--Aug. 2 (1200) 7,220 cfs (12.82 ft); Sept. 11 (1845) 8,410 cfs (13.95 ft).

05484500 RACCOON RIVER AT VAN METER, IOWA

LOCATION.--Lat 41°32'02", long 93°56'59", in SW1/4 SW1/4 sec.22, T.78 N., R.27 W., Dallas County, on right bank 100 ft downstream from bridge on county highway R16, 0.3 mile northeast of Van Meter, 0.7 mile upstream from small left bank tributary, 1.2 miles downstream from confluence of North and South Raccoon River, and 30 miles upstream from mouth.
DRAINAGE AREA.--3,441 sq mi.
PERIOD OF RECORD.--April 1915 to current year. Prior to October 1934, monthly discharge only, published in WSP 1308.
GAGE.--Water-stage recorder. Datum of gage is 841.16 ft above mean sea level. See WSP 1308 for history of changes prior to Aug. 8, 1934.
AVERAGE DISCHARGE.--57 years, 1,215 cfs (4.80 inches per year, 880,300 acre-ft per year); median of yearly mean discharges, 1,080 cfs (4.3 inches per year, 782,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 9,730 cfs Sept. 11 (gage height, 11.33 ft); minimum daily, 88 cfs Oct. 17.

Period of record: Maximum discharge, 41,200 cfs June 13, 1947 (gage height, 21.37 ft, from floodmark); maximum gage height, 21.77 ft July 3, 1958; minimum daily discharge, 10 cfs Jan. 22-31, 1940.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Five discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1308: 1927 (M). WSP 1438: Drainage area. WSP 1508: 1915 (M), 1916-17, 1918-23 (M), 1925 (M), 1926, 1933 (M), 1939 (M), 1947 (M), 1949 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used May 2 to June 8; stage-discharge relation affected by ice Nov. 23-26, Dec. 13 to Mar. 2).

2.37	88	4.0	1,120
2.4	98	6.0	2,940
2.8	288	10.0	7,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	321	277	108	113	1,780	522	2,980	2,040	1,550	1,630	605
2	110	483	246	106	112	2,100	499	3,570	1,780	1,300	6,200	595
3	106	522	299	104	108	1,430	482	3,090	1,570	1,340	5,780	577
4	110	476	399	102	106	1,220	462	3,540	1,410	1,000	5,430	555
5	106	375	464	104	104	1,160	439	3,370	1,300	986	4,150	533
6	102	305	431	100	104	1,070	428	3,300	1,240	1,170	6,450	507
7	102	256	369	98	102	1,340	418	6,530	1,460	1,050	4,380	525
8	106	225	322	96	100	1,850	401	6,600	2,230	954	4,120	481
9	98	220	299	96	98	2,380	388	5,570	1,990	902	4,660	610
10	95	204	277	95	96	2,240	383	4,210	2,450	834	4,550	1,550
11	95	194	251	95	97	2,510	370	3,540	2,150	825	4,070	7,040
12	91	184	204	95	98	2,200	359	3,060	1,830	832	3,530	4,770
13	91	175	142	96	98	2,040	355	3,200	1,720	1,070	2,820	4,530
14	91	175	168	97	98	1,820	351	3,290	3,840	1,070	2,340	4,730
15	91	175	228	98	98	1,640	346	3,060	4,870	824	1,990	4,340
16	91	170	216	98	98	1,620	415	2,730	3,970	861	1,720	3,790
17	88	184	200	99	99	1,550	458	2,490	4,900	1,260	1,510	2,950
18	95	283	200	102	100	1,360	414	2,420	6,360	1,720	1,330	2,340
19	102	357	224	102	102	1,150	414	2,230	4,820	3,140	1,180	1,940
20	110	262	260	104	105	985	455	1,900	3,430	4,680	1,050	1,760
21	135	235	240	106	330	873	516	1,780	2,690	5,240	960	1,570
22	148	230	248	109	760	781	580	1,650	2,090	4,830	870	1,380
23	144	258	230	112	1,140	712	505	1,530	1,850	3,440	809	1,280
24	139	370	220	114	1,440	661	447	1,690	1,950	3,870	753	1,200
25	127	449	220	115	1,700	631	454	1,460	1,640	2,880	771	1,140
26	123	440	140	116	1,280	601	466	1,400	1,410	3,230	746	1,170
27	139	483	100	116	1,160	591	513	2,030	1,320	3,870	736	1,530
28	155	438	102	117	1,700	586	785	1,990	1,230	3,120	728	2,160
29	161	375	104	116	2,360	563	1,360	2,550	1,550	2,300	702	3,230
30	225	328	106	115	------	539	1,930	2,460	1,920	1,900	669	2,800
31	262	------	108	114	------	530	------	2,330	------	1,650	635	------
TOTAL	3,736	9,152	7,294	3,245	13,906	40,513	15,915	91,550	73,010	63,698	77,269	62,188
MEAN	121	305	235	105	480	1,307	531	2,953	2,434	2,055	2,493	2,073
MAX	262	522	464	117	2,360	2,510	1,930	6,600	6,360	5,240	6,450	7,040
MIN	88	170	100	95	96	530	346	1,400	1,230	824	635	481
CFSM	.04	.09	.07	.03	.14	.38	.15	.86	.71	.60	.72	.60
IN.	.04	.10	.08	.04	.15	.44	.17	.99	.79	.69	.84	.67
AC-FT	7,410	18,150	14,470	6,440	27,580	80,360	31,570	181,600	144,800	126,300	153,300	123,300

CAL YR 1971 TOTAL 458,001 MEAN 1,255 MAX 22,000 MIN 81 CFSM .36 IN 4.95 AC-FT 908,400
WTR YR 1972 TOTAL 461,476 MEAN 1,261 MAX 7,040 MIN 88 CFSM .37 IN 4.99 AC-FT 915,300

PEAK DISCHARGE (BASE, 8,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
6-18	0215	10.74	8,840	8-6	0545	10.71	8,790
8-2	1900	10.96	9,140	9-11	1830	11.33	9,730

05484800 WALNUT CREEK AT DES MOINES, IOWA

LOCATION.--Lat 41°35'18", long 93°42'11", in SW1/4 SE1/4 sec.2, T.78 N., R.25 W., Polk County, on left bank, 25 ft downstream from bridge on 63rd Street in Des Moines, and 2.2 miles upstream from Raccoon River.

DRAINAGE AREA.--80.9 sq mi.

PERIOD OF RECORD.--October 1971 to September 1972.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 1,350 cfs June 20 (gage height, 9.53 ft); minimum daily, 0.07 cfs Oct. 12, 17.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used June 19-21, July 1-17, Aug. 13-24, Aug. 26 to Sept. 9, Sept. 23-27, 30; stage-discharge relation affected by ice Dec. 30 to Mar. 9).

4.05	0.07	4.6	10	6.0	128
4.1	.28	4.8	19	6.5	208
4.2	1.1	5.0	32	7.0	330
4.3	2.3	5.4	63	8.0	690
4.4	4.3				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	25	2.7	7.8	1.7	90	6.0	26	18	21	50	9.3
2	.25	22	2.5	7.3	1.7	60	5.7	24	17	19	130	13
3	.10	8.0	2.4	6.8	1.7	100	6.7	20	16	17	50	8.5
4	.14	3.8	2.9	6.0	1.6	120	5.4	18	14	15	35	8.3
5	.18	2.7	3.3	5.0	1.6	100	5.3	20	13	15	30	7.6
6	.39	2.1	3.5	5.8	1.6	70	5.5	47	12	15	120	7.1
7	1.5	1.8	3.7	6.5	1.6	35	5.6	139	16	14	91	26
8	1.5	2.0	4.0	7.0	1.5	18	4.9	148	13	14	70	8.0
9	.33	4.0	4.4	6.8	1.5	20	4.7	105	11	14	49	6.3
10	.10	2.6	8.0	6.6	2.0	15	4.4	80	9.2	11	39	166
11	.10	2.1	5.9	6.4	3.0	13	4.4	66	8.5	10	36	106
12	.07	1.7	6.1	6.0	5.0	12	4.6	62	9.6	19	50	221
13	.14	1.7	6.3	5.4	11	10	5.0	76	30	34	55	209
14	.10	1.7	5.8	4.6	9.5	9.0	5.2	62	533	18	37	118
15	.10	1.5	8.1	4.0	8.0	17	4.8	51	231	14	29	84
16	.10	1.6	6.3	4.3	7.0	13	38	45	114	10	24	65
17	.07	4.4	7.5	4.7	13	12	12	39	82	134	21	51
18	.52	4.6	5.6	5.0	18	11	8.6	34	71	34	18	42
19	1.4	3.0	4.8	4.8	15	10	23	30	361	24	16	35
20	4.1	2.6	4.8	4.5	20	10	18	28	360	18	14	34
21	2.3	1.9	4.4	4.3	35	12	31	27	105	14	17	28
22	.80	1.6	5.3	4.1	50	8.9	21	25	86	11	13	25
23	.60	2.8	4.5	4.0	90	7.5	17	24	64	12	13	25
24	.50	2.5	4.7	3.5	150	6.9	13	26	51	50	13	26
25	.40	2.2	4.4	2.5	120	6.3	12	22	44	35	55	25
26	.30	3.6	4.4	2.1	100	6.2	11	20	37	100	18	35
27	3.0	2.7	5.5	1.9	160	14	10	19	33	150	15	23
28	2.5	3.2	5.2	1.8	450	7.6	45	29	29	90	11	79
29	8.0	4.1	11	1.7	230	6.5	35	27	24	60	10	72
30	10	3.7	15	1.7	------	6.4	28	23	22	30	8.8	54
31	7.0	------	8.0	1.7	------	6.5	------	20	------	20	8.5	------
TOTAL	46.69	127.2	171.0	144.6	1,511.0	833.8	400.8	1,382	2,434.3	1,042	1,146.3	1,617.1
MEAN	1.51	4.24	5.52	4.66	52.1	26.9	13.4	44.6	81.1	33.6	37.0	53.9
MAX	10	25	15	7.8	450	120	45	148	533	150	130	221
MIN	.07	1.5	2.4	1.7	1.5	6.2	4.4	18	8.5	10	8.5	6.3
CFSM	.02	.05	.07	.06	.64	.33	.17	.55	1.00	.42	.46	.67
IN.	.02	.06	.08	.07	.69	.38	.18	.64	1.12	.48	.53	.74
AC-FT	93	252	339	287	3,000	1,650	795	2,740	4,830	2,070	2,270	3,210

WTR YR 1972 TOTAL 10,856.79 MEAN 29.7 MAX 533 MIN .07 CFSM .37 IN 4.99 AC-FT 21,530

PEAK DISCHARGE (BASE,250 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-28	--	--	* 850	9-10	1200	8.86	1,130
6-14	0530	8.65	1,020	9-12	0730	7.21	393
6-20	0015	9.53	1,350	9-28	1415	7.53	526
7-17	1330	8.15	786				

* About.

05485500 DES MOINES RIVER BELOW RACCOON RIVER AT DES MOINES, IOWA

LOCATION.--Lat 41°34'30", long 93°35'48", in NE1/4 SE1/4 sec.10, T.78 N., R.24 W., Polk County, on right bank 10 ft downstream from bridge on Southeast 14th Street at Des Moines, 0.8 mile downstream from Raccoon River and Scott Street Dam, and at mile 200.7.

DRAINAGE AREA.--9,879 sq mi.

PERIOD OF RECORD.--April 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 762.52 ft above mean sea level. Prior to Oct. 1, 1951, and Oct. 1, 1953, to Sept. 30, 1959, water-stage recorder above Scott Street Dam, 0.8 mile upstream at datum 11.16 ft higher. Oct. 1, 1951, to Sept. 30, 1953, and Oct. 1, 1959 to Sept. 30, 1961, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--32 years, 3,783 cfs (5.20 inches per year, 2,741,000 acre-ft per year); median of yearly mean discharges, 3,330 cfs (4.6 inches per year, 2,410,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 16,700 cfs Aug. 9 (gage height, 18.44 ft); minimum daily, 199 cfs Oct. 18.

Period of record: Maximum discharge, 77,000 cfs June 26, 1947 (gage height, 20.8 ft in gage well, 21.6 ft from outside floodmark, site and datum then in use); minimum daily, 55 cfs Oct. 19, 1956.

Maximum stage since at least 1893, that of June 26, 1947, site and datum then in use. Flood of May 31, 1903, reached a stage of 20.9 ft (from flood profile) at Scott Street site and datum, by office of Des Moines City Engineer.

REMARKS.--Records good except those for winter period, which are poor. Des Moines municipal water supply is taken from infiltration galleries on Raccoon River, 3.5 miles above station. Average daily pumpage was about 50 cfs. At times, water is pumped from Raccoon River into recharge basins, or into Waterworks Reservoir (capacity, 4,800 acre-ft). Effluent from sewage treatment plant enters the river 2.3 miles below station. Net effect of diversions not known. Records of periodic chemical analysis for the current year are published in Part 2 of this report.

COOPERATION.--Four discharge measurements furnished by Corps of Engineers. Average monthly pumpage from galleries furnished by Des Moines Water Works.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1943 (P).

Rating tables (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Nov. 1, Nov. 8-26; stage-discharge relation affected by ice Dec. 11-13, Dec. 17 to Feb. 29).

7.1	145	11.0	4,030
8.0	790	14.0	8,400
9.0	1,710	19.0	17,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	278	1,070	1,270	620	320	3,530	2,200	4,780	7,860	3,630	4,150	1,900
2	286	1,660	1,170	610	320	3,870	2,110	6,300	6,790	3,310	7,100	1,840
3	318	1,360	1,010	600	320	3,860	2,000	7,500	5,970	3,300	15,000	1,780
4	280	1,690	1,140	590	320	3,200	1,940	8,580	5,390	3,200	13,000	1,700
5	276	1,440	1,280	570	320	2,910	1,920	9,340	5,030	2,880	10,700	1,590
6	234	1,210	1,390	550	310	2,700	1,810	9,320	5,120	2,850	12,000	1,550
7	255	1,040	1,330	540	300	2,710	1,780	12,500	7,560	2,820	13,500	1,560
8	276	913	1,320	520	300	3,810	1,710	15,900	7,450	2,650	15,400	1,650
9	262	798	1,280	510	290	4,920	,660	14,000	7,210	2,630	16,500	1,750
10	244	703	1,200	500	300	4,370	1,590	11,700	7,090	2,240	15,700	2,610
11	258	670	1,050	490	310	4,540	1,570	9,950	6,690	2,530	12,500	5,260
12	244	692	900	480	310	4,440	1,540	8,810	6,160	2,760	10,100	7,680
13	212	695	700	480	320	4,410	1,500	8,310	6,010	2,900	8,200	6,590
14	217	631	515	480	320	4,230	1,490	8,190	7,720	2,960	6,710	5,980
15	252	592	742	480	330	4,480	1,470	7,830	11,700	2,900	5,770	6,830
16	217	541	703	480	330	4,470	1,710	7,300	11,100	2,940	4,980	6,180
17	217	547	800	480	340	4,840	1,640	6,560	9,000	3,620	4,400	5,160
18	199	643	700	480	340	4,910	1,670	6,060	11,500	4,400	3,950	4,220
19	244	827	650	480	340	4,460	1,740	5,790	9,230	8,090	3,580	3,710
20	249	1,060	650	470	340	4,090	1,700	5,390	8,620	11,000	3,260	3,250
21	268	1,420	750	460	350	3,810	1,780	5,110	6,640	10,800	3,150	3,050
22	313	1,570	850	450	700	3,690	1,740	4,940	5,580	10,000	2,790	2,770
23	310	1,520	900	440	1,100	3,630	1,780	4,880	4,960	8,200	2,600	2,570
24	312	1,480	1,000	420	1,500	3,510	1,770	4,740	4,550	7,560	2,070	2,440
25	316	1,520	950	410	1,900	3,250	1,870	4,490	4,450	7,280	2,560	2,320
26	305	1,550	860	400	2,000	3,020	1,960	4,200	3,910	6,550	2,320	2,320
27	342	1,380	700	380	1,700	2,880	2,000	5,250	3,720	7,090	2,280	2,750
28	332	1,440	580	360	1,800	2,690	2,200	6,010	3,520	6,990	2,470	5,080
29	474	1,330	560	350	4,000	2,550	2,790	7,270	3,440	6,040	2,350	7,070
30	606	1,250	620	340	-------	2,410	3,270	7,980	3,610	5,040	2,180	7,410
31	666	-------	660	330	-------	2,300	-------	8,730	-------	4,480	2,030	-------
TOTAL	9,262	33,242	28,230	14,750	21,430	114,490	55,910	237,710	197,580	153,640	213,300	110,570
MEAN	299	1,108	911	476	739	3,693	1,864	7,668	6,586	4,956	6,881	3,686
MAX	666	1,690	1,390	620	4,000	4,920	3,270	15,900	11,700	11,000	16,500	7,680
MIN	199	541	515	330	290	2,300	1,470	4,200	3,440	2,240	2,030	1,550
CFSM	.03	.11	.09	.05	.07	.37	.19	.78	.67	.50	.70	.37
IN.	.03	.13	.11	.06	.08	.43	.21	.90	.74	.58	.80	.42
AC-FT	18,370	65,940	55,990	29,260	42,510	227,100	110,900	471,500	391,900	304,700	423,100	219,300

CAL YR 1971 TOTAL 1,378,904 MEAN 3,778 MAX 26,900 MIN 72 CFSM .38 IN 5.19 AC-FT 2,735,000
WTR YR 1972 TOTAL 1,190,114 MEAN 3,252 MAX 16,500 MIN 199 CFSM .33 IN 4.48 AC-FT 2,361,000

PEAK DISCHARGE (BASE, 15,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-8	0700	18.27	16,300	8-9	1330	18.44	16,700
8-3	0630	18.00	15,800				

05485640 FOURMILE CREEK AT DES MOINES, IOWA

LOCATION.--Lat 41°36'50", long 93°32'43", in NE1/4 NE1/4 sec.32, T.79 N., R.23 W., Polk County, on right bank 20 ft downstream from bridge on Easton Blvd., 4.4 miles downstream from Muchikinock Creek and 5.0 miles upstream from Des Moines River.
DRAINAGE AREA.--92.7 sq mi.
PERIOD OF RECORD.--October 1971 to September 1972.
GAGE.--Water-stage recorder. Datum of gage is 795.87 ft above mean sea level.
EXTREMES.--Maximum discharge, 1,440 cfs June 20 (gage height, 9.54 ft); minimum daily, 0.06 cfs Oct. 6.
REMARKS.--Records good except those for winter period, which are poor.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used May 8 to June 11, June 16, 21-24; stage-discharge relation affected by ice Nov. 30 to Dec. 4, Dec. 10-15, 17-22, Dec. 26 to Mar. 10).

Oct. 1 to Feb. 28				Feb. 29 to Sept. 30			
3.58	0.05	3.8	9.2	3.60	0.50	4.1	38
3.60	.10	3.9	19	3.65	.98	4.5	76
3.65	.43	4.2	47	3.70	3.2	5.5	204
3.70	1.7	4.6	86	3.75	7.0	7.0	510
3.75	5.1	5.1	147	3.90	20	9.0	1,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	50	1.5	10	1.1	90	6.2	39	14	38	25	6.2
2	.30	47	.66	5.5	1.2	45	4.2	35	9.7	32	25	9.5
3	.20	19	.58	5.0	1.0	55	4.0	29	8.0	31	25	6.4
4	.14	10	.64	3.8	.60	42	2.5	24	5.6	32	25	4.7
5	.10	6.8	1.1	3.0	.35	45	1.5	26	4.6	26	25	4.3
6	.06	3.7	1.9	3.5	.25	40	1.7	88	4.3	24	25	3.5
7	.07	3.4	2.8	4.0	.22	50	1.7	220	2.9	23	25	11
8	2.0	2.2	2.3	4.5	.21	33	1.0	215	2.5	20	26	8.8
9	.34	4.7	1.8	5.0	.20	40	.74	149	2.5	17	28	4.7
10	.42	2.5	10	4.7	.24	35	.70	114	1.4	14	68	62
11	1.0	1.1	6.5	3.5	.35	30	.74	93	.71	15	79	110
12	.12	.62	6.6	2.6	.50	27	.66	70	1.0	15	58	169
13	1.1	.69	7.0	2.0	.80	19	.76	70	3.2	25	45	201
14	.45	.69	4.5	1.7	1.3	14	3.4	58	40	14	37	128
15	.30	.51	5.2	1.5	1.5	21	1.8	49	290	10	32	86
16	.44	.39	6.0	1.8	2.0	18	44	43	190	12	31	69
17	.84	3.3	7.0	2.1	10	16	22	42	139	17	24	60
18	2.1	2.8	3.5	2.5	6.0	12	14	37	116	23	21	48
19	7.0	.65	3.7	2.2	5.0	11	26	31	332	29	19	38
20	11	.54	3.6	1.9	12	8.8	28	28	852	34	18	35
21	7.8	.29	1.6	1.7	11	12	43	26	351	37	16	29
22	1.7	.21	3.0	1.8	9.0	7.4	41	24	226	39	13	24
23	1.0	.53	.89	1.6	15	4.3	33	26	156	42	10	24
24	.97	.51	.88	1.4	30	2.3	28	40	113	43	9.4	24
25	.99	.49	.92	1.1	45	2.1	23	27	89	44	49	23
26	.66	1.3	.80	.40	56	2.5	20	22	70	44	37	27
27	6.9	1.9	1.0	.10	70	15	18	21	57	42	22	20
28	5.3	1.3	1.5	.15	140	13	34	19	45	42	14	71
29	16	3.3	7.0	.40	120	9.4	40	19	42	39	10	101
30	25	2.0	9.0	.70	------	8.1	42	19	38	30	8.6	61
31	15	------	12	.90	------	7.7	------	19	------	26	7.5	------
TOTAL	109.40	172.42	115.47	81.05	540.82	735.6	487.60	1,722	3,206.41	879	857.5	1,469.1
MEAN	3.53	5.75	3.72	2.61	18.6	23.7	16.3	55.5	107	28.4	27.7	49.0
MAX	25	50	12	10	140	90	44	220	852	44	79	201
MIN	.06	.21	.58	.10	.20	2.1	.66	19	.71	10	7.5	3.5
CFSM	.04	.06	.04	.03	.20	.26	.18	.60	1.15	.31	.30	.53
IN.	.04	.07	.05	.03	.22	.30	.20	.69	1.29	.35	.34	.59
AC-FT	217	342	229	161	1,070	1,460	967	3,420	6,360	1,740	1,700	2,910

WTR YR 1972 TOTAL 10,376.37 MEAN 28.4 MAX 852 MIN .06 CFSM .31 IN 4.16 AC-FT 20,580

PEAK DISCHARGE (BASE, 150 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-28	--	--	* 400	6-20	0030	9.54	1,440
5-7	1230	5.90	262	9-13	0930	5.87	269
6-15	1100	6.31	346	9-28	1915	5.84	251

* About.

05486000 NORTH RIVER NEAR NORWALK, IOWA

LOCATION.--Lat 41°27'25", long 93°39'10", in SW1/4 SW1/4 sec.20, T.77 N., R.24 W., Warren County, on left bank 10 ft downstream from bridge on county highway R57, 1.7 miles southeast of Norwalk, 5.2 miles upstream from Middle Creek, and 6.2 miles downstream from Badger Creek.

DRAINAGE AREA.--349 sq mi.

PERIOD OF RECORD.--February 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 788.45 ft above mean sea level (levels by Corps of Engineers). Prior to June 12, 1946, nonrecording gage at same site and datum. Jan. 7 to Oct. 11, 1960, nonrecording gage at site 2.1 miles upstream at different datum.

AVERAGE DISCHARGE.--32 years, 158 cfs (6.15 inches per year, 114,500 acre-ft per year); median of yearly mean discharges, 120 cfs (4.7 inches per year, 86,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,770 cfs Aug. 7 (gage height, 21.47 ft); minimum daily, 0.23 cfs Oct. 5.

Period of record: Maximum discharge, 32,000 cfs June 13, 1947 (gage height, 25.3 ft, from floodmark), from rating curve extended above 9,100 cfs on basis of velocity-area studies; no flow at times during period 1954-58.

REMARKS.--Records good except those for winter period, which are poor.

COOPERATION.--Three discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1946.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.59	200	15	6.4	3.0	230	30	180	83	35	77	38
2	.60	400	14	6.8	3.0	170	29	149	70	30	704	37
3	.42	180	13	7.0	3.0	120	27	117	61	26	1,290	39
4	.31	84	13	6.0	3.0	95	26	95	53	22	553	39
5	.23	40	14	5.0	3.0	75	25	74	48	20	243	38
6	.29	27	16	4.5	2.9	66	24	71	47	18	1,380	36
7	.33	14	19	5.2	2.8	65	23	335	45	17	2,870	34
8	.37	11	20	5.6	2.7	70	22	764	44	17	3,120	38
9	.33	8.2	22	5.8	2.6	58	20	567	38	19	938	33
10	.30	7.3	28	5.6	2.7	62	19	342	33	19	317	347
11	.27	8.0	35	5.4	2.8	52	18	244	29	18	249	1,350
12	.26	7.9	27	5.0	2.9	57	17	196	33	17	213	1,820
13	.37	8.1	20	4.7	3.1	44	16	260	29	17	184	2,320
14	.38	7.8	17	4.3	3.5	38	16	373	125	21	155	2,590
15	.37	7.2	21	4.0	4.0	43	17	297	245	26	129	2,460
16	.35	6.0	17	4.3	4.5	51	20	220	240	36	110	866
17	.33	6.5	15	4.7	5.0	49	25	176	156	60	97	516
18	.55	6.6	12	5.0	5.5	48	29	147	228	808	86	983
19	.88	7.8	11	4.7	6.0	42	32	119	180	698	77	380
20	.92	8.8	10	4.5	7.0	34	44	99	165	298	68	276
21	.67	13	9.5	4.3	50	31	70	84	298	178	63	246
22	.63	21	8.5	4.1	190	28	121	72	147	116	61	212
23	.60	16	8.0	3.9	210	27	97	62	95	85	64	179
24	.58	12	7.5	3.7	220	23	83	60	76	312	63	171
25	.62	11	7.0	3.5	230	20	59	64	65	176	99	169
26	1.2	11	6.2	3.3	190	18	39	69	57	248	152	162
27	2.5	10	5.6	3.0	150	25	31	151	51	349	102	154
28	2.0	11	5.0	2.9	200	32	34	307	45	213	76	171
29	2.3	13	5.3	2.8	240	34	166	174	42	136	59	197
30	4.0	14	5.6	2.9	------	32	220	140	40	93	48	334
31	5.0	------	6.0	2.9	------	31	------	107	------	74	41	------
TOTAL	28.55	1,186.2	433.2	141.8	1,753.0	1,770	1,399	6,115	2,868	4,202	13,688	16,235
MEAN	.92	39.5	14.0	4.57	60.4	57.1	46.6	197	95.6	136	442	541
MAX	5.0	400	35	7.0	240	230	220	764	298	808	3,120	2,590
MIN	.23	6.0	5.0	2.8	2.6	18	16	60	29	17	41	33
CFSM	.003	.11	.04	.01	.17	.16	.13	.56	.27	.39	1.27	1.55
IN.	.003	.13	.05	.02	.19	.19	.15	.65	.31	.45	1.46	1.73
AC-FT	57	2,350	859	281	3,480	3,510	2,770	12,130	5,690	8,330	27,150	32,200

CAL YR 1971 TOTAL 49,990.75 MEAN 137 MAX 2,100 MIN .23 CFSM .39 IN 5.33 AC-FT 99,160
WTR YR 1972 TOTAL 49,819.75 MEAN 136 MAX 3,120 MIN .23 CFSM .39 IN 5.31 AC-FT 98,820

PEAK DISCHARGE (BASE, 1,700 CFS).--Aug. 7 (2300) 3,770 cfs (21.47 ft); Sept. 14 (2230) 2,650 (21.11 ft).

05486490 MIDDLE RIVER NEAR INDIANOLA, IOWA

LOCATION.--Lat 41°25'27", long 93°35'09", in SW1/4 SE1/4 sec.35, T.77 N., R.24 W., Warren County, on right bank 10 ft downstream from bridge on county highway, 0.4 mile upstream from Cavitt Creek, 1.5 miles upstream from bridge on U.S. Highway 69, and 4.6 miles northwest of Indianola.
DRAINAGE AREA.--503 sq mi.
PERIOD OF RECORD.--March 1940 to current year.
GAGE.--Water-stage recorder. Datum of gage is 776.15 ft above mean sea level (Corps of Engineers bench mark). Prior to June 11, 1946, June 9, 1947, to Nov. 23, 1949, and Sept. 8, 1951, to Oct. 30, 1952, nonrecording gage and June 11, 1946, to June 8, 1947 (destroyed by flood), Nov. 24, 1949, to Sept. 7, 1951, Sept. 1, 1952, to Sept. 30, 1962, water-stage recorder at site 1.6 miles downstream at datum 2.81 ft lower.
AVERAGE DISCHARGE.--32 years, 232 cfs (6.26 inches per year, 168,100 acre-ft per year); median of yearly mean discharges, 200 cfs (5.4 inches per year, 145,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 9,150 cfs Sept. 14 (gage height, 21.46 ft); minimum daily, 3.0 cfs Oct. 6.
Period of record: Maximum discharge, 34,000 cfs June 13, 1947 (gage heights: 26.40 ft, from floodmark, former site and datum; 28.27 ft, from floodmark, present site and datum); minimum daily, 0.66 cfs Oct. 4, 1968.
REMARKS.--Records fair except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--Three discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1434: Drainage area. WSP 1508: 1940 (M), 1941, 1944, 1946, 1949 (M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	404	19	12	5.6	450	36	195	139	53	128	49
2	3.8	915	16	11	5.6	350	34	154	115	48	2,810	50
3	3.8	212	15	10	5.6	250	33	138	96	43	1,000	50
4	3.5	96	14	9.0	5.4	220	33	125	89	40	640	49
5	3.5	56	15	8.0	5.4	180	31	109	81	37	500	47
6	3.0	40	17	8.6	5.4	150	30	111	73	34	5,000	44
7	4.3	26	20	10	5.2	130	29	1,560	65	34	3,000	48
8	4.0	25	22	11	5.2	103	31	1,810	65	35	722	47
9	3.3	29	23	12	5.0	103	29	844	64	34	457	46
10	3.5	22	28	12	5.2	101	28	477	1,010	34	290	331
11	3.3	19	63	11	5.4	101	27	342	234	37	232	2,000
12	4.1	18	43	10	5.6	85	26	274	95	40	197	5,060
13	4.5	17	50	9.0	6.0	80	26	685	71	47	169	7,320
14	3.8	12	55	8.0	7.0	71	26	684	1,320	63	143	7,980
15	4.0	11	33	7.0	8.0	68	26	491	1,460	81	127	3,230
16	3.8	10	18	7.8	10	65	34	379	485	64	111	1,150
17	3.9	9.3	22	8.6	15	62	42	274	282	204	98	1,280
18	4.2	11	30	9.5	25	67	44	212	305	1,630	85	2,130
19	4.6	12	24	8.8	40	56	51	177	193	1,020	77	810
20	7.1	11	21	8.4	60	50	74	154	157	544	73	602
21	12	26	18	8.2	250	48	216	134	161	277	69	519
22	6.8	24	16	8.0	300	48	291	119	145	147	71	451
23	5.1	19	14	7.5	350	43	136	106	117	112	69	374
24	4.8	17	14	7.0	400	40	108	109	87	122	67	335
25	5.2	16	13	6.2	350	33	84	112	76	98	280	309
26	7.9	15	12	5.8	300	36	70	129	73	687	120	290
27	12	14	8.0	5.6	350	37	63	139	73	438	76	274
28	9.2	13	10	5.4	400	38	65	208	62	295	70	292
29	9.7	15	11	5.5	430	38	243	671	62	171	62	316
30	17	17	11	5.6	------	37	245	264	57	106	53	347
31	16	------	12	5.8	------	37	------	181	------	82	51	------
TOTAL	185.8	2,131.3	687.0	262.3	3,365.6	3,177	2,211	11,367	7,312	6,657	16,847	35,830
MEAN	5.99	71.0	22.2	8.46	116	102	73.7	367	244	215	543	1,194
MAX	17	915	63	12	430	450	291	1,810	1,460	1,630	5,000	7,980
MIN	3.0	9.3	8.0	5.4	5.0	33	26	106	57	34	51	44
CFSM	.01	.14	.04	.02	.23	.20	.15	.73	.49	.43	1.08	2.37
IN.	.01	.16	.05	.02	.25	.23	.16	.84	.54	.49	1.25	2.65
AC-FT	369	4,230	1,360	520	6,680	6,300	4,390	22,550	14,500	13,200	33,420	71,070

CAL YR 1971 TOTAL 70,469.3 MEAN 193 MAX 4,500 MIN 3.0 CFSM .38 IN 5.21 AC-FT 139,800
WTR YR 1972 TOTAL 90,033.0 MEAN 246 MAX 7,980 MIN 3.0 CFSM .49 IN 6.66 AC-FT 178,600

PEAK DISCHARGE (BASE, 4,500 CFS).--Sept. 14 (2145) 9,150 cfs (21.46 ft).

05487470 SOUTH RIVER NEAR ACKWORTH, IOWA

LOCATION.--Lat 41°20'14", long 93°29'10" in SE1/4 SE1/4 sec.34, T.76 N., R.23 W., Warren County, on right bank 15 ft downstream from bridge on county highway, 0.5 mile downstream from Otter Creek, and 2.2 miles southwest of Ackworth.
DRAINAGE AREA.--460 sq mi.
PERIOD OF RECORD.--February 1940 to current year.
GAGE.--Water-stage recorder. Datum of gage is 769.97 ft above mean sea level (levels by Corps of Engineers). Prior to June 12, 1946, nonrecording gage, June 13, 1946, to Apr. 13, 1960, water-stage recorder, and Apr. 14, 1960, to Sept. 30, 1961, nonrecording gage, all at site 4.0 miles downstream at datum 8.01 ft lower.
AVERAGE DISCHARGE.--32 years, 222 cfs (6.55 inches per year, 160,800 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 12,000 cfs Aug. 6 (gage height, 24.98 ft); minimum daily, 1.9 cfs Oct. 13.
Period of record: Maximum discharge, 34,000 cfs June 5, 1947 (gage height, 24.60 ft, site and datum then in use); maximum gage height, 28.20 ft July 18, 1969; no flow Sept. 19 to Oct. 13, 1956.
Flood in June 1930 reached a stage of 24.5 ft, from information by local residents (discharge, about 30,000 cfs), at site 4.0 miles downstream.
REMARKS.--Records good except those for winter period, which are poor.
COOPERATION.--Three discharge measurements furnished by Corps of Engineers.
REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1508: 1941, 1945 (M), 1946.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	469	11	12	5.4	250	24	340	115	11	34	54
2	5.3	1,040	10	12	5.2	150	22	217	84	9.8	3,350	72
3	4.2	306	9.0	10	5.0	100	22	153	67	8.5	357	28
4	3.2	101	11	9.0	5.0	80	20	114	50	8.5	135	20
5	2.9	45	14	8.0	5.0	70	18	103	47	8.1	74	13
6	2.6	21	18	9.0	4.9	80	18	141	44	8.1	4,090	10
7	2.4	12	26	10	4.8	85	17	3,650	29	8.1	1,070	11
8	2.5	12	28	11	4.6	70	16	3,530	29	9.5	328	10
9	2.6	14	26	12	4.5	58	14	1,330	16	8.5	171	7.0
10	2.6	12	30	12	4.7	49	13	589	36	7.8	122	656
11	2.6	9.9	35	11	4.9	44	12	355	20	7.6	99	1,980
12	2.3	7.8	40	10	5.2	53	11	244	14	9.5	89	6,810
13	1.9	7.2	43	9.0	5.6	58	13	1,020	9.9	22	73	9,660
14	2.6	6.1	38	8.0	6.0	59	13	864	71	42	60	6,100
15	5.5	4.2	32	7.0	8.0	59	12	463	326	50	50	1,520
16	4.1	4.6	25	7.8	10	59	41	262	124	26	42	569
17	2.5	4.7	32	8.4	15	54	64	166	67	48	35	432
18	5.8	9.1	29	8.8	450	46	46	118	70	537	30	363
19	5.1	9.3	25	8.0	400	38	40	87	54	547	25	233
20	10	8.6	21	7.6	350	33	73	66	42	588	22	175
21	14	8.0	18	7.4	500	32	735	55	37	179	19	158
22	12	6.1	16	7.2	450	30	992	44	31	58	18	125
23	6.9	5.3	14	7.0	380	26	350	35	28	34	17	109
24	9.2	6.1	13	6.4	330	23	182	49	26	287	17	108
25	8.4	6.1	12	5.8	280	21	124	52	25	42	183	96
26	6.4	5.7	11	5.4	230	21	99	35	24	888	106	82
27	12	7.5	10	5.2	180	23	84	46	20	601	64	69
28	11	8.4	9.0	5.0	240	28	103	660	13	137	37	70
29	17	10	9.5	5.2	300	26	176	1,340	13	72	25	74
30	62	12	10	5.4	------	24	191	602	12	46	21	75
31	38	------	11	5.4	------	22	------	217	------	33	17	------
TOTAL	269.6	2,178.7	636.5	256.0	4,193.8	1,771	3,545	16,947	1,543.9	4,342.0	10,780	29,689.0
MEAN	8.70	72.6	20.5	8.26	145	57.1	118	547	51.5	140	348	990
MAX	62	1,040	43	12	500	250	992	3,650	326	888	4,090	9,660
MIN	1.9	4.2	9.0	5.0	4.5	21	11	35	9.9	7.6	17	7.0
CFSM	.02	.16	.04	.02	.32	.12	.26	1.19	.11	.30	.76	2.15
IN.	.02	.18	.05	.02	.34	.14	.29	1.37	.12	.35	.87	2.40
AC-FT	535	4,320	1,260	508	8,320	3,510	7,030	33,610	3,060	8,610	21,380	58,890

CAL YR 1971 TOTAL 47,926.5 MEAN 131 MAX 4,700 MIN 1.8 CFSM .28 IN 3.88 AC-FT 95,060
WTR YR 1972 TOTAL 76,152.5 MEAN 208 MAX 9,660 MIN 1.9 CFSM .45 IN 6.16 AC-FT 151,000

PEAK DISCHARGE (BASE,5,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	1915	18.73	6,580	8-6	1100	24.98	12,000
8-2	0830	22.21	9,370	9-13	1100	24.42	11,400

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA

LOCATION.--Lat 41°14'41", long 93°16'08", in NW1/4 NW1/4 sec.3, T.74 N., R.21 W., Marion County, on left bank 15 ft downstream from bridge on county highway, 0.5 mile downstream from Kirk Branch, and 1.7 miles northwest of Dallas.

DRAINAGE AREA.--342 sq mi.

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 759.12 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

AVERAGE DISCHARGE.--10 years, 145 cfs (5.76 inches per year, 105,100 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,150 cfs Sept. 12 (gage height, 22.75 ft); minimum daily, 0.14 cfs Oct. 9-12.

Period of record: Maximum discharge, 7,570 cfs Aug. 9, 1970 (gage height, 23.39 ft); minimum daily, 0.07 cfs Sept. 29, 1968.

Flood of June 11, 1962, reached a stage of 28.87 ft, from floodmark (discharge, about 12,000 cfs). Flood of June 6, 1947, may have been slightly higher.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment discharges for the current year are published in Part 2 of this report.

COOPERATION.--One discharge measurement furnished by Corps of Engineers.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 6-28, May 28-31, Aug. 17 to Sept. 4, Sept. 28-30; stage-discharge relation affected by ice Dec. 9-14, Dec. 18 to Mar. 10).

4.13	.13	4.6	8.4	7.0	300
4.2	.45	4.8	18	9.0	750
4.3	1.2	5.0	32	13.0	2,050
4.4	2.5	5.5	84	17.0	3,800
4.5	5.0	6.0	150	20.0	5,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	128	8.8	11	1.7	180	19	139	69	3.8	26	269
2	1.2	627	7.0	11	1.7	100	19	147	47	3.7	2,840	177
3	1.1	250	5.6	10	1.6	80	18	94	37	3.1	170	55
4	1.1	90	5.6	8.0	1.6	60	18	61	31	2.8	119	34
5	1.4	35	6.7	7.0	1.6	45	17	56	30	2.5	94	24
6	1.2	17	7.3	7.4	1.5	34	16	86	40	2.5	4,800	19
7	.25	9.4	8.7	8.0	1.5	48	17	2,640	29	2.3	777	18
8	.17	6.1	9.3	8.4	1.5	51	15	3,520	21	3.3	224	24
9	.14	4.2	7.0	8.0	1.4	38	12	2,530	18	2.9	123	18
10	.14	3.4	13	7.6	1.5	22	12	534	16	2.4	89	487
11	.14	3.1	30	6.8	1.6	26	12	293	13	2.0	71	273
12	.14	3.1	35	6.0	1.7	34	12	210	12	2.6	57	4,050
13	.17	2.7	27	5.0	1.9	95	14	336	12	18	50	4,130
14	.16	2.0	20	4.2	2.2	106	15	411	57	17	44	5,000
15	.20	1.9	237	3.5	2.5	78	12	250	103	24	38	3,640
16	.23	1.9	231	3.7	3.0	80	53	171	37	10	34	1,350
17	.31	2.3	100	4.0	12	65	54	123	25	11	28	292
18	.32	6.3	60	4.5	400	50	38	98	25	126	23	176
19	.44	19	45	4.2	250	38	35	80	22	637	19	123
20	.96	10	35	4.0	350	33	117	68	18	547	16	93
21	1.2	5.8	25	3.6	600	32	671	59	14	114	14	69
22	.97	3.7	20	3.4	380	31	1,030	52	13	34	12	54
23	.81	3.1	21	3.0	300	25	319	46	9.9	52	13	49
24	.91	2.9	20	2.5	240	22	143	56	8.4	935	12	48
25	.83	2.9	18	1.8	180	19	94	57	7.0	73	20	42
26	5.4	4.0	16	1.7	130	19	70	44	6.6	1,610	32	37
27	1.3	5.0	14	1.7	120	20	56	39	5.8	583	22	32
28	.94	6.4	12	1.6	250	24	61	97	5.4	144	20	34
29	2.4	8.2	10	1.6	230	22	78	413	4.9	98	14	54
30	16	9.4	11	1.7	------	19	93	357	4.3	76	12	42
31	17	------	12	1.7	------	17	------	100	------	34	193	------
TOTAL	58.51	1,273.8	1,078.0	156.6	3,470.5	1,513	3,140	13,167	741.3	5,176.9	10,006	20,713
MEAN	1.89	42.5	34.8	5.05	120	48.8	105	425	24.7	167	323	690
MAX	17	627	237	11	600	180	1,030	3,520	103	1,610	4,800	5,000
MIN	.14	1.9	5.6	1.6	1.4	17	12	39	4.3	2.0	12	18
CFSM	.006	.12	.10	.01	.35	.14	.31	1.24	.07	.49	.94	2.02
IN.	.006	.14	.12	.02	.38	.16	.34	1.43	.08	.56	1.09	2.25
AC-FT	116	2,530	2,140	311	6,880	3,000	6,230	26,120	1,470	10,270	19,850	41,080

CAL YR 1971 TOTAL 34,637.01 MEAN 94.9 MAX 4,200 MIN .14 CFSM .28 IN 3.77 AC-FT 68,700
WTR YR 1972 TOTAL 60,494.61 MEAN 165 MAX 5,000 MIN .14 CFSM .48 IN 6.58 AC-FT 120,000

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	1800	18.80	4,780	8-6	1200	22.35	6,910
8-2	0700	20.15	5,590	8-12	2200	22.75	7,150

05488100 LAKE RED ROCK NEAR PELLA, IOWA

LOCATION.--Lat 41°22'11", long 92°58'48", in NE1/4 NW1/4 sec.19, T.76 N., R.18 W., at outlet works near right end of Red Rock Dam on Des Moines River, 1.4 miles upstream from Lake Creek, 4.5 miles southwest of Pella and at mile 142.3.

DRAINAGE AREA.--12,323 sq mi.

PERIOD OF RECORD.--March 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

EXTREMES.--Current year: Maximum contents, 267,000 acre-ft Sept. 16 (elevation, 738.58 ft); minimum, 87,700 acre-ft Mar. 27 (elevation, 724.71 ft).

Period of record: Maximum contents, 1,010,000 acre-ft Aug. 2, 1969 (elevation, 764.83 ft); minimum 86,600 acre-ft Nov. 19, 1970 (elevation, 724.57 ft).

REMARKS.--Reservoir is formed by earthfill dam completed in 1969. Storage began in March 1969. Releases controlled through 14 concrete conduits extending through the concrete ogee spillway section into the stilling basin. Inlet invert elevation at 690 ft above mean sea level. Maximum design discharge through the conduits is 37,500 cfs but normal flood control operation limits maximum outflow to 30,000 cfs. Spillway section consists of 5 Tainter gates, 41 x 46 feet, on concrete ogee crest at elevation 736 ft. The storage capacity of the reservoir at full flood-control pool level (780 ft) is 1,830,000 acre-ft and that of conservation pool level (725 feet) is 90,000 acre-feet. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Normal operation will maintain an elevation of 725 ft with minimum release of 300 cfs and maximum release of 30,000 cfs during the non-growing season, providing discharges at Ottumwa and Keosauqua do not exceed 30,000 cfs and 35,000 cfs respectively.

Capacity table (elevation, in feet, and contents, in acre-feet)
Note--Includes 90,000 acre-feet sedimentation storage below elevation 725 ft.

725	90,000	735	208,400
730	142,000	740	292,000

CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92,400	102,000	97,000	94,300	90,700	122,000	91,900	96,200	110,000	91,900	91,900	92,800
2	92,700	108,000	96,100	93,600	91,100	122,000	91,900	99,100	104,000	93,600	107,000	92,100
3	92,700	109,000	94,700	92,600	91,000	121,000	91,500	101,000	97,300	94,600	116,000	91,700
4	92,900	105,000	93,700	91,400	90,800	122,000	90,600	104,000	92,900	95,700	121,000	90,400
5	92,900	103,000	93,000	91,000	90,900	120,000	91,300	108,000	91,300	96,200	120,000	90,200
6	92,500	98,600	92,100	91,200	90,900	119,000	91,000	111,000	90,800	96,200	140,000	90,400
7	92,400	94,200	91,900	91,000	90,900	118,000	92,000	123,000	91,800	95,500	174,000	92,200
8	92,900	91,300	91,900	91,200	90,900	116,000	92,000	165,000	95,000	93,600	187,000	92,500
9	92,800	92,100	91,200	91,400	90,900	116,000	92,400	202,000	94,900	91,700	194,000	93,200
10	92,600	92,800	91,800	92,000	91,100	116,000	92,400	214,000	94,500	90,800	198,000	105,000
11	92,300	93,400	91,300	92,000	91,100	117,000	92,300	215,000	94,600	90,800	195,000	124,000
12	92,300	93,600	90,800	92,300	91,300	119,000	92,400	217,000	92,500	92,000	184,000	159,000
13	92,000	94,100	90,000	92,400	91,400	119,000	91,800	216,000	93,600	91,900	169,000	201,000
14	92,000	94,700	90,800	91,600	91,400	119,000	92,500	216,000	98,800	92,000	154,000	240,000
15	91,800	94,900	92,100	90,800	91,300	118,000	93,000	211,000	105,000	91,700	144,000	264,000
16	91,700	95,100	93,700	90,000	91,700	117,000	95,700	205,000	109,000	90,800	133,000	264,000
17	91,700	95,400	93,800	90,000	92,000	115,000	97,500	195,000	108,000	90,800	122,000	252,000
18	91,800	95,200	94,400	90,100	92,200	114,000	99,100	182,000	102,000	92,200	112,000	234,000
19	92,000	95,600	95,300	89,800	92,800	113,000	100,000	173,000	97,000	94,500	105,000	213,000
20	92,500	96,000	95,500	89,600	93,600	110,000	101,000	165,000	95,900	97,000	98,700	192,000
21	92,800	96,000	95,500	89,400	95,800	108,000	109,000	157,000	95,300	95,000	94,500	174,000
22	92,800	96,500	95,800	89,700	98,100	103,000	111,000	150,000	93,300	93,500	92,000	160,000
23	92,800	97,900	96,200	90,000	100,000	97,700	110,000	144,000	91,900	93,800	91,400	148,000
24	92,900	98,300	96,900	90,200	103,000	94,800	108,000	133,000	90,500	95,400	91,300	137,000
25	92,800	98,700	97,500	89,400	105,000	92,000	105,000	124,000	90,200	92,700	92,000	129,000
26	92,900	100,000	98,200	89,600	105,000	88,400	103,000	115,000	90,600	93,600	92,900	117,000
27	93,600	99,300	97,900	90,000	107,000	89,000	100,000	110,000	90,200	94,200	92,600	106,000
28	93,400	99,200	97,000	90,100	110,000	90,100	97,700	108,000	90,800	91,900	92,400	101,000
29	94,600	99,400	96,200	90,300	115,000	91,300	95,900	112,000	90,500	92,000	92,200	99,300
30	95,900	98,100	95,500	90,400	------	91,900	95,500	115,000	90,000	92,400	92,000	99,100
31	96,200	------	94,800	90,600	------	92,000	------	113,000	------	91,800	92,400	------
MAX	96,200	109,000	98,200	94,300	115,000	122,000	111,000	217,000	110,000	97,000	198,000	264,000
MIN	91,700	91,300	90,000	89,400	90,700	88,400	90,600	96,200	90,000	90,800	91,300	90,200
+	725.70	725.89	725.53	725.07	727.58	725.22	725.61	727.41	725.00	725.19	725.26	725.98
*	+3,800	+1,900	-3,300	-4,200	+24,400	-23,000	+3,500	+17,500	-23,000	+1,800	+600	+6,700

CAL YR 1971..............*+3,100
WTR YR 1972..............*+6,700

+ Elevation, in feet, at end of month.
* Change in contents, in acre-feet.

05488500 DES MOINES RIVER NEAR TRACY, IOWA

LOCATION.--Lat 41°16'53", long 92°51'34", in NW1/4 SE1/4 sec.19, T.75 N., R.17 W., Mahaska County, on right bank 250 ft upstream from abandoned Bellefountaine Bridge, 0.5 mile downstream from bridge on State Highway 92, 0.8 mile east of Tracy, 3.1 miles upstream from Cedar Creek, 6.4 miles downstream from English Creek, and at mile 130.4.

DRAINAGE AREA.--12,479 sq mi.

PERIOD OF RECORD.--March 1920 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 670.91 ft above mean sea level. Prior to June 26, 1940, and June 30, 1952, to Nov. 4, 1960, nonrecording gage, and June 27, 1940, to June 29, 1952, water-stage recorder, at site 250 ft downstream at same datum.

AVERAGE DISCHARGE.--52 years, 4,334 cfs (4.72 inches per year, 3,140,000 acre-ft per year); median of yearly mean discharges, 3,860 cfs (4.2 inches per year, 2,800,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 17,400 cfs Aug. 11 (gage height, 11.94 ft); minimum daily, 344 cfs Oct. 4-6.

Period of record: Maximum discharge, 155,000 cfs, June 14, 1947 (gage height, 26.5 ft); minimum daily, 40 cfs Jan. 29 to Feb. 1, 1940.

Maximum stage since 1851, that of June 14, 1947. Flood of May 31, 1903, reached a stage of about 25 ft (discharge, about 130,000 cfs). Minimum daily discharge since at least 1910, that of Jan. 29 to Feb. 1, 1940.

REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

COOPERATION.--Seven discharge measurements furnished by Corps of Engineers.

REVISIONS (WATER YEARS).--WSP 1438: Drainage area. WSP 1509: 1920 (M), 1922 (M), 1933.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	358	455	1,870	1,220	400	2,710	2,730	4,740	11,400	3,430	5,140	2,430
2	358	858	1,880	1,240	400	3,250	2,730	5,600	11,300	2,910	5,530	2,480
3	351	2,750	1,880	1,250	400	3,400	2,670	6,470	10,600	2,910	11,700	2,350
4	344	3,090	1,870	1,100	400	3,400	2,440	7,420	8,980	2,900	15,300	2,130
5	344	3,470	1,860	850	400	3,400	2,120	7,910	7,120	2,890	14,800	1,850
6	344	3,460	1,850	800	400	3,400	1,920	8,690	5,980	2,880	14,100	1,560
7	351	3,430	1,800	760	400	3,860	1,920	10,600	5,980	3,060	12,200	1,200
8	351	2,820	1,700	760	400	4,200	1,920	10,700	6,680	3,660	14,400	1,270
9	372	1,010	1,700	760	400	4,280	1,920	7,730	7,750	3,650	15,900	1,270
10	372	902	1,700	760	400	4,570	1,910	10,800	7,890	3,480	17,300	2,020
11	365	797	1,700	760	400	4,590	1,910	13,000	8,220	2,230	17,300	2,100
12	365	769	1,680	760	400	4,620	1,890	11,200	8,170	2,260	17,200	3,020
13	365	787	1,620	760	400	4,650	1,880	11,200	7,400	2,670	17,100	9,990
14	372	760	1,270	760	400	4,970	1,770	11,800	7,320	3,220	16,300	13,200
15	365	769	900	760	400	5,200	1,440	12,600	10,600	3,210	12,300	13,000
16	372	895	770	740	400	5,670	1,500	12,500	12,200	3,190	11,100	14,900
17	372	904	770	740	400	5,880	1,480	13,000	12,200	3,400	10,500	14,900
18	372	913	770	740	400	5,880	1,660	14,000	13,100	5,140	9,440	15,600
19	379	976	770	740	400	5,890	1,640	13,400	14,300	6,750	7,810	16,600
20	393	967	840	740	400	5,910	1,850	10,800	12,700	10,700	6,580	15,900
21	379	976	900	650	400	5,940	2,410	10,100	9,900	13,400	5,600	13,000
22	379	1,060	900	582	400	6,150	3,530	9,360	8,410	12,300	4,670	10,600
23	379	1,360	900	582	550	6,130	3,770	8,900	7,540	10,200	3,520	9,240
24	379	1,420	900	580	740	5,810	3,690	9,010	6,070	9,190	2,740	8,610
25	372	1,530	900	580	1,030	4,890	3,670	10,100	5,650	10,200	2,690	7,840
26	379	1,610	900	500	1,330	4,890	3,660	9,170	4,770	10,100	2,690	7,800
27	379	1,700	1,000	400	1,280	4,280	3,650	8,130	4,370	10,800	2,590	7,830
28	351	1,710	1,200	400	1,540	2,730	3,830	7,600	4,280	10,700	2,590	7,730
29	358	1,760	1,270	400	2,350	2,720	4,310	8,080	4,030	7,980	2,580	7,650
30	365	1,870	1,240	400	------	2,720	4,350	8,770	3,900	5,620	2,520	8,070
31	353	------	1,280	400	------	2,700	------	10,400	------	5,410	2,400	------
TOTAL	11,338	45,768	40,590	22,474	17,620	138,690	76,170	303,780	248,810	180,440	286,590	226,140
MEAN	366	1,526	1,309	725	608	4,474	2,539	9,799	8,294	5,821	9,245	7,538
MAX	393	3,470	1,880	1,250	2,350	6,150	4,350	14,000	14,300	13,400	17,300	16,600
MIN	344	455	770	400	400	2,700	1,440	4,740	3,900	2,230	2,400	1,200
AC-FT	22,490	90,780	80,510	44,580	34,950	275,100	151,100	602,500	493,500	357,900	568,500	448,500

CAL YR 1971 TOTAL 1,706,325 MEAN 4,675 MAX 27,600 MIN 340 AC-FT 3,384,000
WTR YR 1972 TOTAL 1,598,410 MEAN 4,367 MAX 17,300 MIN 344 AC-FT 3,170,000

05489000 CEDAR CREEK NEAR BUSSEY, IOWA

LOCATION.--Lat 41°13'09", long 92°54'38", at SW corner sec.11, T.74 N., R.18 W., Marion County, on left bank 10 ft downstream from bridge on State Highway 156, 0.8 mile downstream from North Cedar Creek, 1.6 miles northwest of Bussey, 3.0 miles upstream from Honey Creek, and 8.9 miles upstream from mouth.
DRAINAGE AREA.--374 sq mi.
PERIOD OF RECORD.--October 1947 to current year.
GAGE.--Water-stage recorder. Datum of gage is 682.15 ft above mean sea level (levels by Corps of Engineers). Prior to Feb. 21, 1949, nonrecording gage at same site and datum.
AVERAGE DISCHARGE.--25 years, 177 cfs (6.43 inches per year, 128, 200 acre-ft per year); median of yearly mean discharges, 160 cfs (5.8 inches per year, 116,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 4,670 cfs May 8 (gage height, 19.14 ft); minimum daily, 0.55 cfs Oct. 6.

Period of record: Maximum discharge, 29,300 cfs May 9, 1950 (gage height, 27.50 ft); maximum gage height, 28.06 ft July 2, 1958; no flow Sept. 6-20, 1955, Oct. 11, 12, 1956.

Flood in June 1946 reached a stage of 28.45 ft on upstream side and 28.05 ft on downstream side of bridge from levels to floodmarks by Corps of Engineers (discharge, 31,500 cfs).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
COOPERATION.--One discharge measurement furnished by Corps of Engineers.
REVISIONS.--WSP 1438: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-24, Mar. 5 to Apr. 20, May 29 to June 1; stage-discharge relation affected by ice Dec. 17 to Mar. 9).

4.0	.42	4.6	18	7.0	472
4.1	1.1	4.9	41	10.0	1,330
4.2	2.5	5.4	102	14.0	2,550
4.3	4.6	6.0	213	19.0	4,600
4.4	7.9				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	72	13	55	7.0	140	56	481	122	30	16	34
2	.79	1,310	11	45	7.0	110	58	383	96	35	2,030	46
3	.63	199	10	35	6.8	65	54	182	81	33	758	55
4	.64	56	9.0	25	6.6	40	53	131	72	29	154	60
5	.86	29	8.7	18	6.4	45	49	108	256	25	85	62
6	.55	17	10	14	6.2	38	52	116	603	22	2,980	55
7	.68	12	12	12	6.0	56	51	1,290	288	21	1,900	32
8	.73	9.9	15	11	5.8	50	44	4,300	103	19	253	23
9	.65	8.4	15	13	6.0	38	36	1,710	72	18	153	29
10	.70	7.5	20	15	6.2	33	33	502	59	18	108	64
11	.71	7.0	70	17	6.5	34	33	304	45	17	88	107
12	.71	6.9	56	14	6.8	47	35	225	38	16	72	1,130
13	.71	6.5	26	12	7.2	194	47	207	51	15	62	2,510
14	.73	6.2	21	10	7.8	189	47	210	1,020	15	53	725
15	.79	6.2	918	8.0	9.0	130	37	253	1,440	17	44	377
16	.88	5.7	503	7.4	12	138	173	207	302	25	40	158
17	.92	5.7	100	6.8	100	139	377	143	137	28	36	114
18	.86	10	75	7.2	1,400	100	173	113	101	26	32	81
19	1.1	14	60	7.6	350	79	129	93	84	46	29	66
20	2.0	13	50	7.8	170	70	328	81	67	215	28	51
21	2.4	7.9	40	7.8	300	67	1,320	72	56	61	28	33
22	2.9	6.5	28	7.6	260	63	1,730	64	47	23	28	38
23	1.0	6.0	31	7.4	150	53	396	57	39	16	28	36
24	9.0	6.3	33	7.1	100	44	210	107	33	129	29	34
25	16	5.7	31	6.8	75	40	150	119	29	55	66	34
26	3.1	6.3	28	6.6	58	40	119	65	25	697	48	33
27	2.0	7.2	22	6.4	52	44	100	48	23	508	34	29
28	1.3	7.9	20	6.2	60	50	90	54	24	103	27	29
29	1.2	11	15	6.4	100	54	286	2,170	36	51	23	47
30	1.2	12	25	6.6	------	54	308	729	21	32	25	49
31	1.4	------	70	6.8	------	54	------	208	------	23	24	------
TOTAL	58.09	1,878.8	2,345.7	416.5	3,288.3	2,298	6,574	14,732	5,370	2,368	9,281	6,141
MEAN	1.87	62.6	75.7	13.4	113	74.1	219	475	179	76.4	299	205
MAX	16	1,310	918	55	1,400	194	1,730	4,300	1,440	697	2,980	2,510
MIN	.55	5.7	8.7	6.2	5.8	33	33	48	21	15	16	23
CFSM	.005	.17	.20	.04	.30	.20	.59	1.27	.48	.20	.80	.55
IN.	.005	.19	.23	.04	.33	.23	.65	1.47	.53	.24	.92	.61
AC-FT	115	3,730	4,650	826	6,520	4,560	13,040	29,220	10,650	4,700	18,410	12,180

CAL YR 1971 TOTAL 36,294.50 MEAN 99.4 MAX 4,760 MIN .55 CFSM .27 IN 3.61 AC-FT 71,990
WTR YR 1972 TOTAL 54,751.39 MEAN 150 MAX 4,300 MIN .55 CFSM .40 IN 5.45 AC-FT 108,600

PEAK DISCHARGE (BASE, 4,000 CFS).--May 8 (1700) 4,670 cfs (19.14 ft); Aug. 6 (2300) 4,220 cfs (18.23 ft).

05489500 DES MOINES RIVER AT OTTUMWA, IOWA

LOCATION.--Lat 41°00'39", long 92°24'40", in SE1/4 NE1/4 sec.25, T.72 N., R.14 W., Wapello County, on right bank 15 ft downstream from Wabash Railroad Bridge at Ottumwa, 0.4 mile downstream from Ottumwa powerplant, 6.5 miles upstream from Village Creek, 9.5 miles downstream from South Avery Creek, and at mile 94.1.

DRAINAGE AREA.--13,374 sq mi.

PERIOD OF RECORD.--March 1917 to current year (published as "at Eldon" October 1930 to March 1935). Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft above mean sea level. Prior to Sept. 30, 1930, nonrecording gages at Market Street Bridge half a mile upstream at datum 0.83 ft higher. Oct. 1, 1930, to Mar. 31, 1935, nonrecording gage at Eldon 15 miles downstream at different datum. Apr. 1, 1935, to Oct. 25, 1963, water-stage recorder at site 1,100 ft downstream at Vine Street Bridge at datum 0.77 ft higher.

AVERAGE DISCHARGE.--55 years, 4,680 cfs (4.83 inches per year, 3,447,000 acre-ft per year); median of yearly mean discharges, 4,080 cfs (4.1 inches per year,2,960,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 22,000 cfs May 8 (gage height, 8.70 ft); minimum daily, 240 cfs Oct. 3.

Period of record: Maximum discharge, 135,000 cfs June 7, 1947 (gage height, 20.2 ft, site and datum then in use); minimum daily, 30 cfs Jan. 27-29, 31, Feb. 2, 3, 5-7, 1940.

Maximum stage since at least 1850, that of June 7, 1947. Flood of May 31, 1903, reached a stage of 19.4 ft, former site and datum at Vine Street Bridge or about 22 ft at Market Street Bridge, from information by Corps of Engineers and U.S. Weather Bureau (discharge, about 140,000 cfs).

REMARKS.--Records good except those for winter period, which are fair. Prior to Dec. 12, 1958, and since Nov. 30, 1960, diurnal fluctuation at low flow caused by powerplant above station. Flow regulated by Lake Red Rock beginning March 12, 1969 (see sta. 05488100). Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 525: 1917-20. WSP 1308: 1917-23 (M), 1925-27 (M), 1931. WSP 1438: Drainage area.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Sept. 13-30; stage-discharge relation affected by ice Jan. 4-21, Jan. 24 to Feb. 22).

0.8	195	2.0	1,800
1.0	355	3.0	4,220
1.5	950	8.0	19,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	384	846	1,880	1,670	500	3,110	2,850	5,840	11,500	3,750	5,700	2,850
2	393	2,980	1,920	1,380	450	3,210	2,800	6,410	11,600	3,130	6,260	2,850
3	240	2,910	1,900	1,680	600	3,840	2,870	6,540	11,400	3,010	11,000	2,800
4	393	3,110	1,890	800	650	3,830	2,710	7,620	10,100	2,920	14,500	2,660
5	312	3,370	1,900	640	580	3,830	2,290	8,100	8,420	2,910	14,600	2,510
6	278	3,580	1,880	860	600	3,840	2,150	8,740	7,160	2,990	17,700	2,110
7	321	3,480	1,880	900	620	4,090	1,930	12,100	6,890	2,910	15,500	1,650
8	321	3,540	1,850	1,000	560	3,940	1,940	19,500	6,350	3,450	13,800	1,430
9	321	2,100	1,700	900	600	4,320	1,950	12,500	7,790	3,730	14,700	1,480
10	355	995	1,840	840	580	4,520	1,940	10,400	8,020	3,670	16,600	1,340
11	355	836	1,880	780	580	4,680	1,940	13,700	8,430	3,240	16,800	3,260
12	338	769	1,800	760	560	4,750	1,940	12,200	8,520	2,330	16,800	3,580
13	355	748	1,720	780	540	5,090	2,010	11,800	8,380	2,310	16,700	9,690
14	384	779	1,600	820	520	5,260	1,930	11,900	7,640	3,170	16,500	14,000
15	338	715	4,210	800	500	5,380	1,630	12,900	11,600	3,390	13,900	14,000
16	384	770	2,880	800	450	5,890	1,740	13,000	12,800	3,340	11,800	13,400
17	355	916	1,220	800	1,000	6,140	2,210	12,700	12,300	3,310	11,300	14,400
18	374	914	385	780	1,300	6,110	2,060	13,800	12,300	4,310	10,300	14,300
19	494	916	1,170	760	1,500	6,120	2,000	13,800	13,900	6,030	9,100	15,700
20	393	930	1,090	740	850	6,060	2,340	11,900	13,800	8,960	7,410	15,700
21	402	1,010	912	800	800	6,040	6,010	10,800	10,900	12,700	6,590	13,900
22	393	997	982	737	1,100	6,150	7,070	9,690	9,240	13,200	5,060	11,700
23	346	1,150	1,000	568	969	6,240	5,240	9,460	8,170	11,200	4,330	9,570
24	364	1,430	1,020	600	1,010	6,190	4,410	8,950	6,920	9,600	3,210	9,240
25	383	1,450	970	700	1,280	5,270	4,180	10,200	6,200	10,200	3,080	8,250
26	403	1,510	977	660	1,340	4,940	4,070	9,740	5,290	11,000	3,030	7,950
27	431	1,710	817	690	1,620	4,940	4,030	8,830	4,450	11,800	3,010	8,010
28	364	1,730	677	640	1,910	3,750	4,030	7,880	4,530	11,400	2,900	8,010
29	431	1,770	1,410	600	2,920	2,640	5,010	11,000	4,120	10,100	2,880	7,890
30	393	1,810	2,000	560	------	3,020	5,540	10,800	4,070	6,580	2,900	7,890
31	374	------	1,250	520	------	2,800	------	10,300	------	5,780	2,740	------
TOTAL	11,372	49,771	48,610	25,565	26,489	145,990	92,820	333,100	262,790	186,420	300,700	232,120
MEAN	367	1,659	1,568	825	913	4,709	3,094	10,750	8,760	6,014	9,700	7,737
MAX	494	3,580	4,210	1,680	2,920	6,240	7,070	19,500	13,900	13,200	17,700	15,700
MIN	240	715	385	520	450	2,640	1,630	5,840	4,070	2,310	2,740	1,340
AC-FT	22,560	98,720	96,420	50,710	52,540	289,600	184,100	660,700	521,200	369,800	596,400	460,400

CAL YR 1971 TOTAL 1,823,138 MEAN 4,995 MAX 31,300 MIN 54 AC-FT 3,616,000
WTR YR 1972 TOTAL 1,715,747 MEAN 4,688 MAX 19,500 MIN 240 AC-FT 3,403,000

05490500 DES MOINES RIVER AT KEOSAUQUA, IOWA

LOCATION.--Lat 40°43'40", long 91°57'34", in SE1/4 SW1/4 sec.36, T.69 N., R.10 W., Van Buren County, on right bank 10 ft upstream from bridge on State Highway 1 at Keosauqua, 4.0 miles downstream from Chequest Creek, and at mile 51.3.

DRAINAGE AREA.--14,038 sq mi.

PERIOD OF RECORD.--May 1903 to July 1906, April to December 1910, August 1911 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 557.36 ft above mean sea level. Prior to Dec. 24, 1933, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--63 years (1903-5, 1911-72), 5,227 cfs (5.06 inches per year, 3,787,000 acre-ft per year); median of yearly mean discharges, 4,450 cfs (4.3 inches per year, 3,220,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 24,500 cfs May 8 (gage height, 18.26 ft); minimum daily, 296 cfs Oct. 6.

Period of record: Maximum discharge, 146,000 cfs June 1, 1903 (gage height, 27.85 ft, from floodmark); minimum daily, 40 cfs Jan. 30, 1940.

Flood of June 1, 1851, reached a stage of 24 ft (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Prior to Dec. 21, 1958, and since Nov. 30, 1960, some diurnal fluctuation at medium and low stages caused by powerplant at Ottumwa. Flow regulated by Lake Red Rock beginning March 12, 1969 (see sta 05488100). Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 525: 1913-20. WSP 1438: Drainage area. WSP 1508: 1903, 1905-6, 1915-18 (M), 1922 (M), 1924-26 (M), 1932-34 (M), 1937, 1942 (M).

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Aug. 5-15; stage-discharge relation affected by ice Jan. 5 to Mar. 8).

-0.3	246	1.0	2,220
0.0	510	4.0	10,000
.5	1,240	8.0	23,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	404	444	1,930	1,900	660	3,200	3,300	6,650	10,800	4,230	5,630	2,730
2	328	2,820	1,980	1,970	630	3,300	3,210	7,340	11,700	3,800	5,740	2,900
3	337	3,270	2,010	1,750	600	3,300	3,150	6,680	11,500	3,100	7,870	2,770
4	442	3,200	1,990	2,000	700	3,900	3,150	7,140	10,900	3,080	12,600	2,720
5	356	3,210	1,990	1,500	780	3,900	2,970	8,260	9,380	2,980	14,900	2,560
6	296	3,570	1,990	1,000	740	3,900	2,540	8,180	7,820	2,980	16,000	2,390
7	381	3,610	1,980	1,200	760	3,900	2,410	8,240	7,060	3,030	18,500	1,990
8	310	3,580	1,980	1,300	740	4,100	2,160	20,500	6,730	3,010	14,200	1,630
9	359	3,570	1,950	1,400	700	4,230	2,090	17,700	6,680	3,730	14,400	1,410
10	340	1,960	2,000	1,250	740	4,470	2,100	12,000	7,900	3,820	15,900	1,450
11	339	1,090	2,540	1,150	710	4,620	2,120	11,000	7,930	3,770	17,100	1,430
12	371	954	2,170	1,050	700	5,000	2,190	14,000	8,350	3,010	17,200	3,390
13	352	854	1,960	950	680	6,470	2,280	13,000	8,430	2,310	17,000	5,060
14	359	809	1,920	1,000	660	6,180	2,240	12,500	8,180	2,350	16,900	13,200
15	365	825	16,100	930	640	5,800	2,130	12,500	9,440	3,560	15,700	15,100
16	396	794	11,700	910	600	6,110	1,950	13,000	12,600	3,490	12,500	14,000
17	348	798	3,590	900	1,300	6,280	2,210	13,500	12,500	3,440	11,400	15,200
18	381	991	1,570	1,200	2,500	6,310	2,520	14,000	12,300	3,490	10,800	15,200
19	404	958	1,080	1,200	2,300	6,170	2,280	14,100	13,300	5,000	9,780	15,900
20	476	969	1,320	1,150	2,100	6,100	2,500	13,400	14,700	6,840	8,220	16,800
21	555	972	1,350	1,100	1,500	6,110	8,670	12,800	12,800	10,600	6,900	16,200
22	438	1,020	1,090	1,000	1,400	6,130	8,800	10,000	10,100	13,300	6,110	13,400
23	500	1,040	1,190	900	1,700	6,250	7,650	9,240	8,740	12,300	4,830	11,200
24	456	1,180	1,170	800	1,500	6,220	5,360	9,720	7,900	10,400	4,180	9,530
25	403	1,450	1,170	850	1,600	6,080	4,810	9,550	6,490	9,330	3,220	9,030
26	389	1,520	1,130	870	1,800	5,050	4,570	10,400	6,110	10,500	3,200	8,210
27	381	1,590	1,090	800	2,000	5,070	4,470	9,470	5,200	11,600	3,040	8,030
28	424	1,750	1,040	800	2,200	4,950	5,280	8,680	4,610	11,500	2,930	8,100
29	453	1,900	890	780	2,800	3,770	5,580	9,100	4,610	10,900	2,900	8,070
30	363	1,870	2,880	740	-------	3,090	6,760	11,600	4,180	8,630	2,820	7,920
31	608	-------	3,130	700	-------	3,420	-------	10,100	-------	5,950	2,800	-------
TOTAL	12,314	52,568	79,880	35,000	35,740	153,380	111,450	344,350	268,940	186,030	305,270	237,520
MEAN	397	1,752	2,577	1,129	1,232	4,948	3,715	11,110	8,965	6,001	9,847	7,917
MAX	608	3,610	16,100	2,000	2,800	6,470	8,800	20,500	14,700	13,300	18,500	16,800
MIN	296	444	890	700	600	3,090	1,950	6,650	4,180	2,310	2,800	1,410
AC-FT	24,420	104,300	158,400	69,420	70,890	304,200	221,100	683,000	533,400	369,000	605,500	471,100

CAL YR 1971 TOTAL 1,923,331 MEAN 5,269 MAX 34,500 MIN 239 AC-FT 3,815,000
WTR YR 1972 TOTAL 1,822,442 MEAN 4,979 MAX 20,500 MIN 296 AC-FT 3,615,000

05491000 SUGAR CREEK NEAR KEOKUK, IOWA

LOCATION.--Lat 40°26'33", long 91°28'24", in NW1/4 SE1/4 sec.7, T.65 N., R.5 W., Lee County, on left bank 13 ft downstream from bridge on county highway W62, 2.8 miles downstream from Barlean Creek, 4.6 miles upstream from mouth, and 6.0 miles northwest of Post Office in Keokuk.

DRAINAGE AREA.--105 sq mi.

PERIOD OF RECORD.--April 1922 to September 1931, August 1958 to current year. Monthly discharge only for some periods, published in WSP 1308.

GAGE.--Water-stage recorder. Datum of gage is 510.20 ft above mean sea level. Prior to June 25, 1923, and Nov. 28, 1928, to Sept. 30, 1931, nonrecording gage; June 25, 1923, to Oct. 8, 1928, and Aug. 29, 1958, to Oct. 1, 1967, water-stage recorder at site of former bridge on old channel 0.6 mile downstream at same datum. Oct. 6, 1967, to Mar. 11, 1968, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--23 years (1922-31, 1958-72), 67.1 cfs (8.68 inches per year, 48,610 acre-ft per year); median of yearly mean discharges, 52 cfs (6.7 inches per year, 37,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,260 cfs Dec. 21 (gage height, 12.10 ft); minimum daily, 0.01 cfs Oct. 1, 2, 14-17, Nov. 14.

Period of record: Maximum discharge not determined, occurred Nov. 17, 1928; maximum discharge recorded, 6,620 cfs Oct. 1, 1927 (gage height, 13.85 ft, at former site 0.6 mile downstream); no flow at times most years.

Flood of June 9, 1905, reached a stage of 20.6 ft, from floodmarks, at former site 0.6 mile downstream (discharge, 33,000 cfs, estimated on basis of velocity-area study).

REMARKS.--Records fair except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	1.4	5.9	60	2.0	80	119	125	13	7.0	2.4	.45
2	.01	3.0	4.6	25	2.0	27	67	79	8.9	4.4	2.0	.70
3	79	6.2	4.6	20	1.9	20	48	42	6.7	3.7	3.7	.80
4	74	3.8	5.1	14	1.8	17	36	28	5.5	3.3	6.5	.75
5	7.4	3.6	4.6	10	1.7	15	28	23	4.8	3.0	3.2	.40
6	5.6	2.0	7.8	11	1.7	15	23	20	23	2.8	26	.20
7	2.8	1.6	5.4	13	1.6	16	20	29	12	2.7	23	.30
8	1.3	1.6	4.4	14	1.6	14	17	27	7.4	2.2	13	.25
9	.97	1.4	5.6	15	1.5	12	16	24	21	2.2	5.5	.10
10	.47	1.2	33	14	1.7	11	16	19	10	1.9	3.5	.07
11	.04	.79	22	13	2.5	12	17	16	5.1	1.6	2.4	.05
12	.03	.41	2.6	12	5.0	153	91	14	4.2	4.8	1.7	.06
13	.02	.03	15	10	9.0	865	49	30	7.1	2.5	1.4	.08
14	.01	.01	73	7.0	15	378	32	32	256	1.8	.95	50
15	.01	.79	41	4.0	35	160	151	36	1,120	3.3	.60	9.6
16	.01	.98	10	4.8	70	174	67	20	527	3.2	.79	3.8
17	.01	.41	7.0	5.6	600	119	71	15	94	13	.70	3.0
18	.03	.22	6.2	6.6	1,000	69	42	13	49	24	.60	2.0
19	.05	.41	6.0	8.0	500	46	29	11	85	215	.50	.98
20	2.8	.41	48	7.4	250	36	32	10	644	39	.45	2.2
21	21	.22	1,600	6.8	300	28	499	9.2	438	27	.40	23
22	8.8	.03	625	6.0	270	53	486	8.0	71	11	.35	5.6
23	4.4	.03	63	5.6	400	52	137	7.4	37	6.0	.30	3.8
24	3.0	.79	16	5.0	500	39	67	13	22	4.4	.35	3.2
25	2.2	1.4	5.4	4.0	450	22	45	10	15	2.9	.70	2.8
26	3.4	.79	1.5	3.0	400	69	35	7.9	9.2	5.1	1.0	3.0
27	5.1	1.4	2.0	2.0	350	72	28	7.0	7.6	50	.80	2.6
28	1.9	1.6	30	1.7	220	46	34	6.9	71	32	.40	5.9
29	.60	2.4	70	1.8	150	39	34	9.6	73	8.2	.20	16
30	.79	4.8	561	1.9	------	52	221	11	18	4.0	.07	4.4
31	.98	------	202	1.9	------	119	------	22	------	2.8	.04	------
TOTAL	226.64	43.72	3,487.7	314.1	5,544.0	2,830	2,557	725.0	3,665.5	494.8	103.50	146.09
MEAN	7.31	1.46	113	10.1	191	91.3	85.2	23.4	122	16.0	3.34	4.87
MAX	79	6.2	1,600	60	1,000	865	499	125	1,120	215	26	50
MIN	.01	.01	1.5	1.7	1.5	11	16	6.9	4.2	1.6	.04	.05
CFSM	.07	.01	1.08	.10	1.82	.87	.81	.22	1.16	.15	.03	.05
IN.	.08	.02	1.24	.11	1.96	1.00	.91	.26	1.30	.18	.04	.05
AC-FT	450	87	6,920	623	11,000	5,610	5,070	1,440	7,270	981	205	290

CAL YR 1971 TOTAL 14,981.44 MEAN 41.0 MAX 1,600 MIN 0 CFSM .39 IN 5.31 AC-FT 29,720
WTR YR 1972 TOTAL 20,138.05 MEAN 55.0 MAX 1,600 MIN .01 CFSM .52 IN 7.13 AC-FT 39,940

PEAK DISCHARGE (BASE, 2,000 CFS).--Dec. 21 (1200) 2,260 cfs (12.10 ft); June 15 (0345) 1,520 cfs (10.53 ft).

05494300 FOX RIVER AT BLOOMFIELD, IOWA

LOCATION.--Lat 40°46'10", long 92°25'05", in SW1/4 SE1/4 sec.13, T.69 N., R.14 W., Davis County, on left bank 15 ft downstream from bridge on county highway V20, 1.3 miles northwest of county courthouse at Bloomfield, and 8.6 miles downstream from North Fox Creek.

DRAINAGE AREA.--87.7 sq mi.

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 755.57 ft above mean sea level.

AVERAGE DISCHARGE.--15 years, 44.9 cfs (6.95 inches per year, 32,530 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,890 cfs Dec. 15 (gage height, 20.36 ft); minimum daily, 0.04 cfs Aug. 31.

Period of record: Maximum discharge, 8,600 cfs May 6, 1960 (gage height, 24.02 ft), from rating curve extended above 3,400 cfs on basis of slope-area measurement of peak flow; no flow at times most years.

Flood of June 9, 1905, and June 18, 1946 exceeded all other known floods at this location (stage and discharge unknown).

REMARKS.--Records fair except those for winter period, which are poor.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	8.7	1.2	15	2.3	13	22	249	7.5	.75	.95	.10
2	.45	89	1.1	7.0	2.3	20	20	91	6.1	.70	.95	.80
3	.60	7.8	1.1	3.5	2.1	10	19	51	3.7	.65	3.0	.68
4	.60	1.9	1.1	3.0	1.8	4.0	18	40	2.4	.65	2.8	.39
5	.50	1.2	1.1	2.2	1.7	3.0	17	34	2.5	.60	1.3	.39
6	.45	.86	1.2	1.8	1.6	2.7	16	33	5.2	.55	80	.20
7	.55	.91	1.3	2.8	1.6	2.6	13	83	8.0	.50	24	.35
8	.70	.80	1.3	4.5	1.6	2.1	10	270	3.8	.50	7.6	.29
9	.70	.75	1.7	6.0	1.5	2.1	9.1	148	2.2	.50	3.8	.10
10	.70	.72	73	5.4	2.0	2.4	8.7	68	2.0	.40	2.3	.07
11	.60	.70	19	4.5	3.0	2.0	11	47	1.3	.40	1.7	.75
12	.60	.67	5.9	4.0	3.5	73	17	40	1.3	.40	1.5	1.6
13	.60	.64	4.5	3.5	4.0	249	14	61	5.0	.40	1.2	2.2
14	.65	.60	3.5	2.8	6.0	71	11	60	9.1	1.2	1.0	1.3
15	.60	.63	2,400	2.2	50	56	10	47	21	2.8	.80	1.1
16	.60	.75	198	2.5	110	65	19	35	8.2	.92	1.0	1.5
17	.65	.77	30	2.9	400	38	20	29	4.2	.90	.87	1.2
18	.60	1.4	18	4.5	130	23	13	25	2.9	.81	.71	.62
19	1.2	.87	11	5.0	18	13	15	16	5.1	1.9	.63	.29
20	1.6	.82	8.0	4.2	16	11	34	9.2	8.5	1.3	.50	.44
21	1.0	.90	6.5	3.8	14	9.0	1,580	8.2	3.0	.48	.65	1.1
22	.90	.90	6.0	3.5	11	7.6	499	6.9	1.8	.40	.50	1.1
23	2.0	.92	5.4	3.3	15	6.6	99	6.5	1.3	.90	.35	1.1
24	1.1	1.0	5.0	3.0	10	5.6	57	12	1.1	.90	.44	1.1
25	1.0	.97	4.5	2.8	6.0	4.8	42	8.2	1.1	.90	2.1	1.1
26	.75	1.0	4.1	2.5	4.0	4.2	36	6.6	1.0	6.1	2.5	2.7
27	.65	1.1	3.7	2.3	4.0	4.0	32	6.0	.89	3.8	1.3	1.6
28	.58	1.0	2.8	2.0	5.0	5.0	35	7.2	1.0	1.4	.55	1.5
29	.91	1.3	8.7	1.9	8.0	10	132	40	.83	.63	.13	2.2
30	1.1	1.3	176	2.0	------	21	87	40	.75	.80	.06	2.2
31	.98	------	30	2.2	------	25	------	11	------	.70	.04	------
TOTAL	24.32	130.78	3,034.7	116.6	836.0	765.7	2,915.8	1,588.8	122.77	33.84	145.23	30.07
MEAN	.78	4.36	97.9	3.76	28.8	24.7	97.2	51.3	4.09	1.09	4.68	1.00
MAX	2.0	89	2,400	15	400	249	1,580	270	21	6.1	80	2.7
MIN	.40	.60	1.1	1.8	1.5	2.0	8.7	6.0	.75	.40	.04	.07
CFSM	.009	.05	1.12	.04	.33	.28	1.11	.58	.05	.01	.05	.01
IN.	.01	.06	1.29	.05	.35	.32	1.24	.67	.05	.01	.06	.01
AC-FT	48	259	6,020	231	1,660	1,520	5,780	3,150	244	67	288	60

CAL YR 1971 TOTAL 10,852.23 MEAN 29.7 MAX 2,400 MIN .08 CFSM .34 IN 4.60 AC-FT 21,530
WTR YR 1972 TOTAL 9,744.61 MEAN 26.6 MAX 2,400 MIN .04 CFSM .30 IN 4.13 AC-FT 19,330

PEAK DISCHARGE (BASE, 2,000 CFS).--Dec. 15 (0915) 3,890 cfs (20.36 ft); Apr. 21 (1745) 2,330 cfs (15.95 ft).

06483270 ROCK RIVER AT ROCK RAPIDS, IOWA

LOCATION.--Lat 43°26'13", long 96°09'58", in NE1/4 SW1/4 sec. 33, T.100 N., R.45 W., Lyon County, on right bank at dam on north side of city park in Rock Rapids, 0.3 mile upstream from Tom Creek, 0.5 mile northeast of junction of U.S. Highways 75 and 9, and at mile 42.8.

DRAINAGE AREA.--788 sq mi.

PERIOD OF RECORD.--August 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,331.55 ft above mean sea level.

AVERAGE DISCHARGE.--13 years, 171 cfs (2.95 inches per year, 123,900 acre-ft per year); median of yearly mean discharges, 120 cfs (2.1 inches per year, 89,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, about 4,200 cfs Mar. 15 (gage height, 5.52 ft, backwater from ice); minimum daily, 2.0 cfs Feb. 10, 11.

Period of record: Maximum discharge, 29,000 cfs Apr. 8, 1969 (gage height, 10.23 ft); minimum daily, 0.8 cfs Feb. 1-5, 1965.

REMARKS.--Records fair except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	55	28	14	4.5	9.0	150	535	746	65	106	26
2	18	53	29	13	4.0	9.0	139	2,100	515	60	94	26
3	16	41	30	13	3.6	9.0	121	2,550	382	55	76	26
4	15	31	31	13	3.2	9.0	119	1,410	304	46	70	24
5	14	27	33	13	3.0	10	119	988	259	42	70	25
6	14	13	38	13	2.8	12	118	830	227	60	76	27
7	14	17	38	13	2.6	14	114	710	295	55	76	29
8	15	20	32	12	2.4	17	106	590	300	70	76	29
9	13	21	32	12	2.2	20	102	502	380	88	70	35
10	13	21	28	12	2.0	25	99	430	380	78	60	38
11	13	21	26	12	2.0	30	88	390	282	77	55	28
12	11	20	25	11	2.2	200	88	362	214	88	46	25
13	11	19	24	10	2.4	1,200	88	440	175	152	42	25
14	10	20	22	9.0	2.6	2,200	93	491	152	430	33	26
15	12	20	21	8.0	2.8	3,500	94	480	130	420	30	24
16	12	28	20	8.0	3.0	2,990	92	440	112	458	23	23
17	11	42	19	8.0	3.2	1,590	86	380	223	366	20	21
18	12	66	18	7.5	3.4	879	83	326	199	297	17	23
19	11	81	18	7.5	3.6	617	82	265	152	308	15	21
20	12	83	17	7.5	4.0	496	86	231	144	380	8.8	26
21	13	61	17	7.5	4.5	468	152	206	152	400	22	38
22	13	32	16	7.0	5.0	494	348	199	137	460	26	35
23	13	49	16	7.0	5.5	451	419	240	124	440	25	36
24	13	45	15	6.5	6.0	372	323	299	106	371	26	33
25	13	55	15	6.5	6.5	318	247	390	94	282	27	45
26	13	50	15	6.0	7.0	286	200	460	76	231	27	47
27	22	32	14	6.0	7.5	258	174	460	76	183	26	49
28	21	30	14	5.5	8.0	215	170	390	76	168	25	46
29	23	29	14	5.5	8.0	200	214	353	65	152	24	44
30	36	28	14	5.0	------	182	256	395	65	130	27	40
31	48	------	14	4.5	------	166	------	629	------	118	28	------
TOTAL	494	1,110	693	283.5	117.5	17,246.0	4,570	18,471	6,542	6,530	1,346.8	940
MEAN	15.9	37.0	22.4	9.15	4.05	556	152	596	218	211	43.4	31.3
MAX	48	83	38	14	8.0	3,500	419	2,550	746	460	106	49
MIN	10	13	14	4.5	2.0	9.0	82	199	65	42	8.8	21
CFSM	.02	.05	.03	.01	.005	.71	.19	.76	.28	.27	.06	.04
IN.	.02	.05	.03	.01	.005	.81	.22	.87	.31	.31	.06	.04
AC-FT	980	2,200	1,370	562	233	34,210	9,060	36,640	12,980	12,950	2,670	1,860

CAL YR 1971 TOTAL 50,618.2 MEAN 139 MAX 4,000 MIN 6.9 CFSM .18 IN 2.39 AC-FT 100,400
WTR YR 1972 TOTAL 58,343.8 MEAN 159 MAX 3,500 MIN 2.0 CFSM .20 IN 2.75 AC-FT 115,700

PEAK DISCHARGE (BASE, 2,000 CFS).--Mar. 15 (time unknown) about 4,200 cfs; May 3 (0200) 3,030 cfs (3.88 ft).

06483500 ROCK RIVER NEAR ROCK VALLEY, IOWA

LOCATION.--Lat 43°11'58", long 96°20'22", in NW1/4 NE1/4 sec.25, T.97 N., R.47 W., Sioux County, on downstream side of bridge on U.S. Highway 18, 1.8 miles west of Rock Valley, and at mile 15.9.
DRAINAGE AREA.--1,600 sq mi.
PERIOD OF RECORD.--June 1948 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,211.81 ft above mean sea level. Prior to Aug. 13, 1952, nonrecording gage (June 4, 1949, to Aug. 12, 1952, supplementary water-stage recorder operating above 6.2 ft gage height) at same site and datum.
AVERAGE DISCHARGE.--24 years, 305 cfs (2.59 inches per year, 221,000 acre-ft per year); median of yearly mean discharges, 240 cfs (2.0 inches per year, 175,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 5,890 cfs Mar. 13 (gage height, 12.04 ft); minimum daily, 6.6 cfs Feb. 10, 11.

Period of record: Maximum discharge, 40,400 cfs Apr. 7, 1969 (gage height, 17.32 ft); no flow Feb. 20-23, Feb. 27 to Mar. 8, 1959.

Flood in 1897 reached a stage of 17.0 ft (discharge not determined), from information by State Highway Commission.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS.--WSP 1439: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	70	74	25	9.5	15	286	712	824	150	311	92
2	39	74	74	24	8.5	15	273	1,890	760	140	291	91
3	37	74	74	23	8.0	15	253	3,700	602	130	275	88
4	36	68	75	22	7.8	15	244	3,000	514	130	255	86
5	34	60	77	21	7.6	25	236	1,870	465	130	244	84
6	32	54	77	20	7.4	40	233	1,490	435	130	320	85
7	31	51	73	19	7.2	80	233	1,290	2,840	130	300	85
8	30	49	70	19	7.0	90	225	1,080	1,660	130	280	84
9	30	48	66	19	6.8	100	218	944	828	160	260	82
10	30	48	62	19	6.6	200	218	852	744	197	240	84
11	30	49	58	19	6.6	1,200	220	792	625	220	220	85
12	30	49	54	19	6.8	4,600	220	748	539	238	208	82
13	31	48	50	18	7.0	5,100	218	788	489	294	190	77
14	31	48	48	17	7.5	4,420	218	836	444	355	180	77
15	31	46	46	16	8.0	4,010	218	848	400	520	170	74
16	30	48	44	15	8.5	4,440	220	784	368	536	160	72
17	30	55	42	15	9.0	2,990	220	708	357	536	150	68
18	31	72	40	15	9.5	1,590	220	632	676	483	145	65
19	31	79	38	14	10	1,060	220	562	625	438	135	64
20	32	88	37	14	10	880	220	510	504	812	130	68
21	32	94	36	14	11	796	220	468	438	1,030	125	66
22	33	94	35	14	11	736	350	444	403	1,200	120	69
23	33	81	34	13	12	708	700	599	370	1,040	115	69
24	32	69	33	13	12	640	900	578	331	840	110	68
25	33	74	32	12	12	565	700	632	280	648	101	78
26	33	82	31	12	12	510	500	664	240	539	98	88
27	37	85	30	11	13	450	450	688	200	474	97	86
28	43	82	29	11	13	406	400	748	180	435	96	82
29	48	79	28	10	14	373	400	692	170	426	95	78
30	55	75	27	10	------	339	500	629	160	365	94	77
31	70	------	26	9.5	------	306	------	656	------	342	93	------
TOTAL	1,090	1,993	1,520	502.5	269.3	36,714	9,733	30,834	17,471	13,198	5,608	2,354
MEAN	35.2	66.4	49.0	16.2	9.29	1,184	324	995	582	426	181	78.5
MAX	70	94	77	25	14	5,100	900	3,700	2,840	1,200	320	92
MIN	30	46	26	9.5	6.6	15	218	444	160	130	93	64
CFSM	.02	.04	.03	.01	.006	.74	.20	.62	.36	.27	.11	.05
IN.	.03	.05	.04	.01	.006	.85	.23	.72	.41	.31	.13	.05
AC-FT	2,160	3,950	3,010	997	534	72,820	19,310	61,160	34,650	26,180	11,120	4,670

CAL YR 1971 TOTAL 102,072.0 MEAN 280 MAX 7,160 MIN 20 CFSM .18 IN 2.37 AC-FT 202,500
WTR YR 1972 TOTAL 121,286.8 MEAN 331 MAX 5,100 MIN 6.6 CFSM .21 IN 2.82 AC-FT 240,600

PEAK DISCHARGE (BASE, 3,000 CFS)

DATE	TIME	G. HT.	DISCHARGE	DATE	TIME	G. HT.	DISCHARGE
3-13	0030	12.04	5,890	6-7	1300	11.21	4,740
5-3	1900	10.45	4,070				

06485500 BIG SIOUX RIVER AT AKRON, IOWA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW1/4 SW1/4 sec.31, T.93 N., R.48 W., Plymouth County, Iowa, on left bank at west edge of Akron, 0.6 mile downstream from bridge on State Highway 48, and 2.3 miles upstream from Union Creek.

DRAINAGE AREA.--9,030 sq mi, approximately, of which about 1,970 sq mi is probably noncontributing.

PERIOD OF RECORD.--October 1928 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft above mean sea level. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft upstream at same datum.

AVERAGE DISCHARGE.--44 years, 858 cfs (621,600 acre-ft per year).

EXTREMES.--Current year: maximum discharge, 10,500 cfs June 8 (gage height, 17.02 ft); minimum daily, 68 cfs Feb. 12.

Period of record: Maximum discharge, 80,800 cfs Apr. 9, 1969 (gage height, 22.99 ft); minimum daily, 7 cfs Feb. 26-28, 1936.

REMARKS.--Records good except those for the winter period, which are poor. Records of chemical analyses for the water year 1972 are published in Part 2 of Water Resources Data for South Dakota, 1972.

REVISIONS (WATER YEARS).--WSP 1309: 1929 (M), 1931-33 (M), 1936 (M), 1938 (M), 1940 (M). WSP 1389: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	219	222	180	89	178	1,410	2,040	3,890	1,560	1,700	594
2	135	238	200	182	86	159	1,310	3,460	4,230	1,460	1,670	578
3	135	230	197	178	80	151	1,220	5,080	4,500	1,380	1,640	557
4	139	212	193	172	76	147	1,150	6,740	4,610	1,320	1,590	540
5	148	224	190	160	72	152	1,110	7,580	4,490	1,260	1,560	523
6	144	210	186	148	71	182	1,080	6,040	4,420	1,290	1,480	512
7	135	194	183	140	71	203	1,050	5,060	5,600	1,180	1,580	506
8	130	166	180	132	71	236	1,010	4,760	9,300	1,160	1,560	515
9	126	217	175	132	70	231	990	4,280	8,800	1,110	1,420	497
10	123	197	172	133	70	239	975	3,880	4,770	1,080	1,320	479
11	122	194	162	135	69	1,400	957	3,510	3,680	1,630	1,240	468
12	120	191	160	136	68	4,000	946	3,180	3,190	1,330	1,170	462
13	119	183	159	130	71	6,420	942	3,090	2,830	1,200	1,110	465
14	118	196	157	116	73	7,310	927	3,200	2,560	1,180	1,040	455
15	116	193	157	110	74	8,550	917	3,310	2,320	1,210	984	465
16	115	193	157	109	75	9,530	917	3,320	2,130	1,470	934	446
17	115	215	159	106	77	10,100	916	3,000	1,980	1,690	882	438
18	116	241	164	105	78	8,250	928	2,840	1,900	1,800	831	438
19	117	272	173	109	79	4,980	956	2,670	2,270	1,640	781	429
20	117	285	179	109	80	3,860	1,040	2,490	2,120	2,010	735	492
21	119	290	182	110	80	3,710	1,210	2,320	1,910	2,440	708	437
22	120	285	184	110	81	3,330	1,260	2,200	1,750	2,400	700	432
23	118	280	187	107	82	3,020	1,300	2,230	1,700	2,520	686	426
24	118	265	185	99	85	2,750	1,390	2,470	1,750	2,710	671	410
25	117	255	178	95	89	2,460	1,390	2,820	1,840	2,430	653	412
26	118	277	172	89	95	2,110	1,300	3,550	1,910	2,160	639	422
27	132	288	170	84	109	1,840	1,270	3,710	1,930	2,000	629	424
28	138	281	169	79	122	1,710	1,260	3,640	1,870	1,930	626	436
29	137	274	170	78	144	1,640	1,260	3,630	1,760	1,880	618	412
30	200	266	170	83	------	1,580	1,290	3,630	1,660	1,820	604	397
31	230	------	171	90	------	1,470	------	3,770	------	1,700	607	------
TOTAL	4,070	7,031	5,463	3,745	2,387	51,898	33,671	113,500	97,670	51,950	32,372	14,067
MEAN	131	234	176	121	82.3	2,964	1,122	3,661	3,256	1,676	1,044	469
MAX	230	290	222	182	144	10,100	1,410	7,580	9,300	2,710	1,700	594
MIN	115	166	157	78	68	147	916	2,040	1,660	1,080	604	397

CAL YR 1971 TOTAL 260,129 MEAN 713 MAX 6,900 MIN 60 AC-FT 516,000
WTR YR 1972 TOTAL 457,824 MEAN 1,251 MAX 10,100 MIN 68 AC-FT 908,100

PEAK DISCHARGE (BASE, 3,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-17	0100	17.35	10,200	6-8	2100	17.02	10,500
5-4	2400	15.58	8,060				

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA

LOCATION.--Lat 42°29'10", long 96°24'47", in NW1/4 SE1/4 sec.16, T.29 N., R.9 E., sixth principal meridan, Dakota County, Nebraska, on right bank on upstream side of bridge on U.S. Highway 77 at South Sioux City, Nebraska, 2.0 miles downstream from Big Sioux River, and at mile 732.3.

DRAINAGE AREA.--314,600 sq mi, approximately.

PERIOD OF RECORD.--October 1897 to current year in reports of Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only published in WSP 1310. January 1879 to December 1890 (monthly discharges only) in House Document 238, 73rd Congress, 2d session, Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft above mean sea level. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 miles of present site and at various datums. Jan. 1, 1906, to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935 to Sept. 30, 1969, water-stage recorder at present site at datum 19.98 ft higher, and Oct. 1, 1969 to Sept. 30, 1970 at datum 20.00 ft higher.

AVERAGE DISCHARGE.--75 years, 31,900 cfs (23,110,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 55,800 cfs July 17 (gage height, 24.53 ft); maximum gage height, 25.06 ft July 21; minimum daily discharge, 14,500 cfs Jan. 15, 16; minimum gage height observed, 14.00 ft Jan. 16.

Period of record: Maximum discharge, 441,000 cfs Apr. 14, 1952 (gage height, 24.20 ft); minimum, 2,500 cfs Dec. 29, 1941; minimum gage height, -6.60 ft Dec. 14, 1968, result of freezeup.

REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by upstream main-stem reservoirs.

REVISIONS (WATER YEARS).--WSP 716: 1929-30. WSP 876: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48,900	53,800	48,200	22,800	21,500	24,400	40,900	47,600	47,900	44,300	50,200	49,200
2	49,500	54,100	46,600	22,600	20,500	21,600	42,700	46,600	47,900	44,000	50,200	48,200
3	50,200	53,800	45,000	22,000	19,700	21,400	44,300	44,300	48,900	42,700	50,500	47,600
4	50,500	53,400	43,700	21,000	19,200	21,400	42,700	49,200	49,200	43,400	49,800	48,600
5	49,800	54,400	41,800	20,500	19,700	19,800	42,400	50,200	49,500	42,100	50,200	48,600
6	50,800	54,400	39,700	21,000	19,800	23,700	43,000	48,200	49,800	45,300	51,200	48,600
7	51,500	53,100	38,500	22,000	19,700	28,400	43,700	43,700	48,900	46,600	51,200	50,200
8	49,800	53,800	37,300	23,000	19,300	26,600	44,600	40,000	52,800	46,600	50,800	47,900
9	50,200	52,900	34,300	22,800	19,300	24,800	44,600	43,700	51,500	47,200	50,200	49,200
10	48,900	53,800	33,100	22,800	19,000	24,600	44,000	44,300	49,800	47,600	49,500	49,800
11	48,900	54,700	31,300	22,200	19,300	26,000	44,300	43,400	52,400	47,900	49,200	50,200
12	49,800	53,100	28,400	22,000	19,800	29,200	44,600	45,000	50,500	49,500	49,200	46,000
13	49,800	53,100	26,300	21,400	20,000	29,500	43,700	47,600	50,500	48,900	46,900	42,700
14	49,800	53,800	25,800	21,000	20,000	29,500	42,400	44,300	50,200	48,900	49,200	51,800
15	49,800	54,100	23,300	14,500	20,000	30,100	41,800	42,100	48,600	49,500	48,600	50,800
16	49,500	54,400	22,800	14,500	20,000	31,300	41,200	42,400	47,600	49,500	48,600	50,200
17	49,500	55,700	22,000	19,000	20,200	33,100	42,100	43,700	47,900	54,100	48,900	50,200
18	49,800	55,400	22,200	25,000	19,300	36,400	43,400	43,000	46,600	46,000	49,200	49,800
19	50,200	53,400	23,700	20,000	19,000	39,100	44,000	43,700	46,600	40,900	48,600	49,800
20	50,200	54,400	22,800	15,000	20,600	39,400	44,300	43,400	46,000	50,500	50,500	50,500
21	50,500	55,000	22,600	17,000	23,700	39,400	44,600	45,000	46,600	53,100	49,500	50,200
22	51,500	55,700	20,000	18,000	23,300	40,600	43,000	46,300	46,000	47,200	48,900	49,800
23	51,200	55,400	22,800	19,000	20,800	39,400	42,100	48,200	45,000	42,700	50,800	49,500
24	51,500	55,700	22,600	18,000	21,600	38,800	41,500	48,600	44,600	49,800	49,200	49,500
25	51,500	54,700	22,400	17,000	21,400	39,400	41,800	43,700	45,000	49,200	49,800	49,800
26	51,500	53,400	22,400	16,000	21,200	39,700	42,700	48,200	44,300	46,900	49,500	50,800
27	52,800	52,400	21,600	15,000	21,400	40,300	43,400	50,800	43,700	49,800	48,900	49,200
28	52,400	50,500	21,400	18,000	23,500	40,000	42,700	50,500	44,600	48,600	48,900	49,500
29	51,200	50,200	22,800	19,000	25,800	40,000	42,100	48,900	45,000	48,600	48,900	49,500
30	52,100	49,200	22,800	20,000	-------	40,000	42,400	47,900	44,000	48,900	48,900	49,800
31	53,100	-------	22,000	22,000	-------	38,700	-------	46,900	-------	49,200	49,500	-------
TOTAL	1,566.7M	1,611.7M	900,200	614,100	598,600	994,600	1,291.0M	1,421.4M	1,431.9M	1,469.5M	1,535.5M	1,477.5M
MEAN	50,540	53,720	29,040	19,810	20,640	32,080	43,030	45,850	47,730	47,400	49,530	49,250
MAX	53,100	55,700	48,200	25,000	25,800	40,600	44,600	50,800	52,800	54,100	51,200	51,800
MIN	48,900	49,200	20,000	14,500	19,000	19,800	40,900	40,000	43,700	40,900	46,900	42,700
AC-FT	3,108M	3,197M	1,786M	1,218M	1,187M	1,973M	2,561M	2,819M	2,840M	2,915M	3,046M	2,931M

CAL YR 1971 TOTAL 14,818,000 MEAN 40,600 MAX 69,800 MIN 13,500 AC-FT 29,390,000
WTR YR 1972 TOTAL 14,912,700 MEAN 40,750 MAX 55,700 MIN 14,500 AC-FT 29,580,000

M Expressed in thousands.

06600100 FLOYD RIVER AT ALTON, IOWA

LOCATION.--Lat 42°58'55", long 96°00'03", in NE1/4 NE1/4 sec.11, T.94 N., R.44 W., Sioux County, on left bank at downstream side of Chicago and Northwestern Railway Company bridge at east edge of Alton, 34.3 miles upstream from West Branch Floyd River at mile 58.1.

DRAINAGE AREA.--265 sq mi.

PERIOD OF RECORD.--October 1955 to current year. Prior to December 1955, monthly discharge only, published in WSP 1730.

GAGE.--Water-stage recorder. Datum of gage is 1,269.55 ft above mean sea level.

AVERAGE DISCHARGE.--17 years, 40.6 cfs (2.08 inches per year, 29,410 acre-ft per year); median of yearly mean discharges, 35 cfs (1.8 inches per year, 25,400 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,620 cfs Mar. 12 (gage height, 15.59 ft); minimum daily, 1.0 cfs Feb. 5-25.

Period of record: Maximum discharge, 12,200 cfs Mar. 28, 1962 (gage height, 18.35 ft); no flow at times in 1956, 1958-59, 1965, 1968.

Flood in June 1953 reached a discharge of about 45,500 cfs, from information by Corps of Engineers.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Mar. 13-16, May 1-10, 13-15, Sept. 19-30;
stage-discharge relation affected by ice Dec. 15 to Mar. 12).

6.2	2.2	6.8	36	10.0	404
6.3	5.5	7.3	78	12.0	820
6.5	16	8.0	147	14.0	1,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	13	7.1	2.9	1.1	10	27	164	57	22	48	13
2	5.3	12	7.6	2.8	1.1	9.0	26	609	53	22	46	12
3	4.2	9.2	7.6	2.4	1.1	8.0	25	415	49	21	44	11
4	3.5	9.0	7.2	2.2	1.1	7.0	24	304	47	20	39	11
5	3.7	8.5	6.8	2.2	1.0	7.0	23	244	49	19	36	10
6	3.3	7.4	7.8	2.2	1.0	50	23	317	50	19	124	10
7	2.8	5.5	8.2	2.3	1.0	250	22	240	430	20	151	11
8	2.5	6.9	6.7	2.4	1.0	120	22	182	772	20	114	11
9	2.2	7.4	6.1	2.5	1.0	150	21	149	227	18	106	9.6
10	3.1	7.7	6.6	2.5	1.0	300	21	127	146	17	84	9.0
11	5.0	8.1	6.3	2.6	1.0	700	20	114	110	24	70	9.4
12	5.5	9.0	5.9	2.6	1.0	2,000	19	111	93	111	57	9.5
13	5.2	9.1	5.2	2.4	1.0	1,190	20	143	81	109	48	9.7
14	5.0	9.2	4.9	2.2	1.0	439	20	156	71	67	42	9.5
15	5.2	9.7	4.8	1.5	1.0	185	19	137	63	152	35	8.7
16	6.1	11	4.7	1.4	1.0	119	19	115	56	79	30	8.3
17	5.9	17	4.6	1.4	1.0	90	18	99	54	66	26	7.6
18	6.4	18	4.4	1.4	1.0	73	16	84	56	82	23	7.1
19	6.2	16	4.3	1.4	1.0	60	16	77	52	74	20	6.5
20	7.1	13	4.1	1.3	1.0	53	15	70	47	150	18	8.3
21	7.3	10	3.9	1.3	1.0	56	32	64	43	418	17	9.0
22	6.7	8.5	3.8	1.3	1.0	65	58	61	40	353	16	8.3
23	6.4	8.6	3.8	1.3	1.0	60	53	73	37	193	16	8.0
24	6.8	8.5	3.7	1.3	1.0	50	44	76	34	131	15	7.6
25	6.5	8.3	3.7	1.3	1.0	44	37	72	32	98	15	11
26	6.4	9.3	3.7	1.2	1.2	40	33	66	30	82	15	13
27	9.6	7.4	3.4	1.2	2.0	38	34	63	29	73	15	15
28	9.8	9.1	3.3	1.2	3.0	35	41	68	28	69	14	14
29	11	7.2	3.3	1.1	4.0	32	49	73	26	62	12	12
30	13	7.1	3.1	1.1	------	30	62	68	24	55	11	11
31	13	------	3.0	1.1	------	28	------	63	------	50	12	------
TOTAL	190.1	290.7	159.6	56.0	35.6	6,298.0	859	4,604	2,886	2,696	1,319	301.1
MEAN	6.13	9.69	5.15	1.81	1.23	203	28.6	149	96.2	87.0	42.5	10.0
MAX	13	18	8.2	2.9	4.0	2,000	62	609	772	418	151	15
MIN	2.2	5.5	3.0	1.1	1.0	7.0	15	61	24	17	11	6.5
CFSM	.02	.04	.02	.007	.005	.77	.11	.56	.36	.33	.16	.04
IN.	.03	.04	.02	.007	.004	.88	.12	.65	.41	.38	.19	.04
AC-FT	377	577	317	111	71	12,490	1,700	9,130	5,720	5,350	2,620	597

CAL YR 1971 TOTAL 26,528.20 MEAN 72.7 MAX 3,500 MIN .39 CFSM .27 IN 3.72 AC-FT 52,620
WTR YR 1972 TOTAL 19,695.10 MEAN 53.8 MAX 2,000 MIN 1.0 CFSM .20 IN 2.76 AC-FT 39,070

PEAK DISCHARGE (BASE, 800 CFS).--Mar. 12 (1915) 2,620 cfs (15.59 ft); June 8 (0045) 1,410 cfs (13.74 ft).

06600300 WEST BRANCH FLOYD RIVER NEAR STRUBLE, IOWA

LOCATION.--Lat 42°55'15", long 96°10'30", in NE1/4 NE1/4 sec.32, T.94 N., R.45 W., Sioux County, on right bank at downstream side of bridge on county highway B62, 0.2 mile west of U.S. Highway 75, 0.8 mile downstream from Orange City slough, 2.2 miles northeast of Struble, 14 miles upstream from Floyd River, and at mile 39.3.

DRAINAGE AREA.--181 sq mi.

PERIOD OF RECORD.--October 1955 to current year. Prior to December 1955, monthly discharge only, published in WSP 1730.

GAGE.--Water-stage recorder. Datum of gage is 1,239.40 ft above mean sea level (State Highway Commission bench mark).

AVERAGE DISCHARGE.--17 years, 28.2 cfs (2.12 inches per year, 20,430 acre-ft per year); median of yearly mean discharges, 22 cfs (1.7 inches per year, 15,900 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,860 cfs June 8 (gage height, 14.06 ft); minimum daily, 0.24 cfs Jan. 29 to Feb. 18.

Period of record: Maximum discharge, 8,060 cfs Mar. 28, 1962 (gage height, 15.63 ft); no flow at times most years.

REMARKS.--Records fair except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).

Oct. 1 to Apr. 3				Apr. 4 to Sept. 30			
3.2	2.6	7.0	250	3.7	2.8	5.5	136
3.4	7.1	8.0	370	3.8	5.3	6.5	278
3.8	20	10.0	750	4.0	13	9.0	810
4.5	52	12.0	1,330	4.3	28	11.0	1,400
5.5	115			4.8	63	13.0	2,150

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	6.3	4.2	1.4	.24	30	10	163	43	22	34	9.6
2	5.4	5.8	4.1	1.4	.24	20	9.4	299	35	20	33	9.7
3	2.8	5.6	4.0	1.2	.24	15	8.4	164	32	19	32	9.6
4	3.4	5.6	4.0	1.1	.24	12	8.6	133	55	18	29	9.9
5	3.6	5.4	4.0	1.1	.24	10	8.6	128	36	17	28	9.8
6	3.1	5.4	3.9	1.1	.24	70	8.3	141	32	18	36	10
7	3.4	5.8	3.9	1.1	.24	200	6.9	100	738	18	47	9.5
8	3.8	5.6	3.9	1.1	.24	120	6.9	81	1,990	17	43	9.2
9	3.8	5.6	3.8	1.1	.24	150	6.6	71	337	15	37	8.9
10	3.8	5.1	3.7	1.1	.24	250	6.6	64	153	14	34	9.0
11	3.7	5.1	3.4	1.1	.24	500	6.6	61	102	52	30	8.5
12	3.6	5.1	3.0	1.1	.24	1,030	6.6	56	87	62	27	8.8
13	3.3	5.1	2.9	1.0	.24	419	5.9	100	80	57	24	8.7
14	3.4	4.9	2.6	.80	.24	337	5.3	103	68	40	21	8.6
15	3.8	4.9	2.4	.60	.24	107	5.0	81	63	29	18	8.3
16	3.7	4.9	2.2	.55	.24	67	4.4	69	56	28	16	7.9
17	3.8	5.9	2.0	.50	.24	51	3.9	63	61	33	15	7.9
18	4.0	8.5	1.9	.48	.24	43	3.7	53	61	36	13	7.3
19	3.7	5.7	1.8	.46	.25	37	3.7	46	57	34	12	6.8
20	3.4	4.9	1.7	.44	.28	31	5.6	43	50	197	11	8.3
21	3.0	4.7	1.6	.42	.28	30	22	39	45	396	10	9.3
22	3.1	5.2	1.6	.40	.26	28	32	35	42	232	10	8.2
23	3.7	4.9	1.6	.37	.26	23	29	53	40	126	10	8.1
24	3.7	4.8	1.6	.34	.25	19	20	60	36	84	10	8.2
25	3.5	4.9	1.6	.30	.25	17	17	67	35	69	10	9.6
26	5.6	4.8	1.5	.28	.26	16	14	48	33	60	9.7	9.9
27	7.1	5.4	1.5	.26	.30	15	14	45	30	51	9.7	9.3
28	7.0	4.7	1.5	.25	2.0	13	18	70	26	50	9.0	8.5
29	6.3	4.6	1.4	.24	15	12	21	163	24	43	8.0	8.1
30	8.8	4.4	1.4	.24	------	12	20	60	23	40	7.8	7.5
31	11	------	1.4	.24	------	11	------	48	------	37	8.9	------
TOTAL	138.1	159.6	80.1	22.07	23.71	3,695	338.0	2,707	4,470	1,934	643.1	263.0
MEAN	4.45	5.32	2.58	.71	.82	119	11.3	87.3	149	62.4	20.7	8.77
MAX	11	8.5	4.2	1.4	15	1,030	32	299	1,990	396	47	10
MIN	2.8	4.4	1.4	.24	.24	10	3.7	35	23	14	7.8	6.8
CFSM	.02	.03	.01	.004	.005	.66	.06	.48	.82	.34	.11	.05
IN.	.03	.03	.02	.004	.004	.76	.07	.56	.92	.40	.13	.05
AC-FT	274	317	159	44	47	7,330	670	5,370	8,870	3,840	1,280	522

CAL YR 1971 TOTAL 14,469.30 MEAN 39.6 MAX 4,000 MIN 1.4 CFSM .22 IN 2.97 AC-FT 28,700
WTR YR 1972 TOTAL 14,473.68 MEAN 39.5 MAX 1,990 MIN .24 CFSM .22 IN 2.97 AC-FT 28,710

PEAK DISCHARGE (BASE, 400 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
3-12	1245	11.14	1,230	7-21	0400	7.50	464
6-8	0600	14.06	2,860				

06600500 FLOYD RIVER AT JAMES, IOWA

LOCATION.--Lat 42°34'36", long 96°18'43", in SE1/4 SE1/4 sec.30, T.90 N., R.46 W., Plymouth County, on right bank at downstream side of bridge on county highway C70, 0.2 mile east of James, 14.3 miles downstream from West Branch Floyd River, and at mile 9.5.

DRAINAGE AREA.--882 sq mi.

PERIOD OF RECORD.--December 1934 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,092.59 ft above mean sea level. Prior to Sept. 11, 1938, June 9 to Nov. 5, 1953, and Oct. 1, 1955, to May 22, 1957, nonrecording gage and May 23, 1957, to Sept. 30, 1970, water-stage recorder at same site at datum 10.0 ft higher.

AVERAGE DISCHARGE.--37 years (1935-72), 177 cfs (2.73 inches per year, 128,200 acre-ft per year); median of yearly mean discharges, 150 cfs (2.3 inches per year, 109,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,940 cfs Mar. 13 (gage height, 17.63 ft); maximum gage height, 18.66 ft Mar. 6 (backwater from ice); minimum daily discharge, 9.2 cfs Feb. 4-13.

Period of record: Maximum discharge, 71,500 cfs June 8, 1953 (gage height, 25.3 ft, from floodmarks), from rating curve extended above 16,000 cfs on basis of contracted-opening and flow-over-embankment measurement of peak flow; minimum daily, 1 cfs Aug. 20, 27, 1936, Feb. 10-23, 1959.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment discharges for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1240: 1935 (M), 1936, 1937-38 (M), 1942, 1945. WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Nov. 28, Dec. 6-8, Mar. 12-16, Apr. 9-23, Aug. 13 to Sept. 30; stage-discharge relation affected by ice Nov. 6-8, Nov. 29 to Dec. 5, Dec. 9 to Mar. 11).

10.4	28	12.5	432
10.8	78	14.5	1,110
11.5	199	18.0	3,050

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	61	41	18	9.4	500	96	472	207	115	197	62
2	43	54	40	16	9.4	200	93	843	191	110	170	64
3	39	49	39	15	9.4	160	92	959	186	106	160	61
4	36	45	39	14	9.2	95	88	708	303	101	149	59
5	35	44	39	16	9.2	100	87	621	223	95	137	59
6	32	40	38	16	9.2	300	81	606	191	217	134	56
7	32	38	40	17	9.2	1,200	81	594	845	119	201	54
8	31	45	37	18	9.2	600	81	480	2,020	95	276	52
9	34	46	37	19	9.2	500	81	409	1,730	92	230	51
10	35	41	35	19	9.2	600	74	367	701	89	217	51
11	31	40	34	19	9.2	1,200	75	342	509	134	192	51
12	32	40	32	19	9.2	2,280	76	330	413	176	170	50
13	30	38	30	15	9.2	2,710	74	390	364	236	151	50
14	31	37	28	12	9.4	1,680	72	431	322	265	136	52
15	30	36	26	11	9.4	821	71	416	280	179	118	49
16	32	37	25	11	9.6	474	67	367	258	229	111	47
17	31	45	24	11	9.6	334	68	330	296	254	102	45
18	32	59	23	11	9.8	260	61	300	247	208	93	44
19	32	59	23	11	9.8	225	62	266	232	195	86	44
20	34	55	23	11	10	199	63	243	223	453	79	44
21	34	47	22	11	10	195	109	226	204	768	75	54
22	34	43	22	11	11	191	145	216	184	854	73	52
23	34	41	22	10	11	185	167	263	171	673	74	45
24	34	46	21	10	12	170	153	295	160	455	70	44
25	34	44	21	10	12	149	134	316	154	354	69	54
26	30	44	21	9.8	14	139	120	264	146	296	76	70
27	38	45	20	9.8	18	128	114	235	139	258	69	60
28	47	41	20	9.8	50	120	122	229	135	227	66	58
29	45	41	20	9.6	300	112	145	285	128	217	61	56
30	58	41	20	9.6	------	107	151	292	122	201	59	52
31	70	------	19	9.6	------	101	------	228	------	195	60	------
TOTAL	1,130	1,342	881	409.2	625.8	16,035	2,903	12,323	11,284	7,966	3,861	1,590
MEAN	36.5	44.7	28.4	13.2	21.6	517	96.8	398	376	257	125	53.0
MAX	70	61	41	19	300	2,710	167	959	2,020	854	276	70
MIN	30	36	19	9.6	9.2	95	61	216	122	89	59	44
CFSM	.04	.05	.03	.02	.02	.59	.11	.45	.43	.29	.14	.06
IN.	.05	.06	.04	.02	.03	.68	.12	.52	.48	.34	.16	.07
AC-FT	2,240	2,660	1,750	812	1,240	31,810	5,760	24,440	22,380	15,800	7,660	3,150

CAL YR 1971 TOTAL 95,827.0 MEAN 263 MAX 10,000 MIN 13 CFSM .30 IN 4.04 AC-FT 190,100
WTR YR 1972 TOTAL 60,350.0 MEAN 165 MAX 2,710 MIN 9.2 CFSM .19 IN 2.55 AC-FT 119,700

PEAK DISCHARGE (BASE, 2,500 CFS).--Mar. 13 (0500) 2,940 cfs (17.63 ft).

06602400 MONONA-HARRISON DITCH NEAR TURIN, IOWA

LOCATION.--Lat 41°57'52", long 95°59'30", in NW1/4 NE1/4 sec.32, T.83 N., R.44 W., Monona County, on right pier at downstream side of bridge on county highway E51, 1.0 mile west of gaging station on Little Sioux River near Turin, 4 miles southwest of Turin, 5.2 miles northeast of Blencoe, and 12.5 miles upstream from mouth.

DRAINAGE AREA.--900 sq mi.

PERIOD OF RECORD.--January 1958 to current year. Records for April 1939 to January 1958 not equivalent owing to diversion from Little Sioux River through equalizer ditch 1.5 miles upstream. Prior to May 1942, published as "near Blencoe".

GAGE.--Water-stage recorder. Datum of gage is 1,020.00 ft above mean sea level (Corps of Engineers bench mark). Prior to May 7, 1942, non-recording gage at site 4.8 miles downstream at datum 10.40 ft lower. May 7, 1942, to Oct. 13, 1953, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--14 years, 221 cfs (3.51 inches per year, 160,100 acre-ft per year); median of yearly mean discharges, 200 cfs (3.2 inches per year, 145,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,720 cfs July 17 (gage height, 16.93 ft); minimum daily, 25 cfs Feb. 7-10.

Period of record: Maximum discharge, 19,900 cfs Feb. 19, 1971 (gage height, 23.03 ft); minimum daily, 8.5 cfs Jan. 3-11, 1959.

REMARKS.--Records good except those for winter period, which are poor. Monona-Harrison ditch is a dug channel and is a continuation of West Fork ditch, paralleling the Little Sioux River, and discharging into the Missouri River 1.5 miles upstream from the mouth of the Little Sioux River. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Mar. 9-13, May 26 to June 8; stage-discharge relation affected by ice Dec. 12 to Mar. 8).

.4	31	4.0	742
1.0	105	10.0	1,990
1.5	188	12.0	4,160
2.0	282		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	119	49	35	27	500	56	1,620	135	92	636	88
2	43	78	53	35	27	300	57	1,730	129	189	1,080	84
3	43	59	58	35	27	150	56	685	124	102	298	84
4	42	56	58	35	27	100	56	406	129	84	211	82
5	41	54	57	35	27	90	57	312	134	75	181	74
6	43	53	62	35	26	70	54	652	135	96	165	88
7	40	41	64	35	25	1,500	53	515	129	347	184	95
8	39	44	57	35	25	800	51	330	849	112	294	91
9	39	52	57	35	25	284	52	276	282	86	229	84
10	42	54	49	35	25	278	51	244	159	81	168	84
11	44	54	46	35	26	320	50	229	134	84	144	123
12	45	53	42	35	27	408	52	228	123	84	129	272
13	45	54	40	34	28	716	53	374	568	210	120	192
14	46	53	40	33	28	306	52	354	282	170	111	101
15	44	53	40	32	28	186	51	292	145	186	105	79
16	44	53	38	32	28	161	56	246	117	170	99	74
17	43	59	38	32	28	129	60	215	168	3,450	94	83
18	51	72	38	32	28	110	54	197	488	3,880	91	81
19	48	82	38	32	29	99	42	174	157	1,520	88	75
20	45	68	38	32	31	91	48	165	190	992	87	78
21	45	57	38	32	50	94	77	154	130	908	88	98
22	43	53	38	32	100	116	144	149	112	635	91	86
23	44	51	38	32	120	97	111	147	102	382	88	66
24	45	53	38	32	140	81	75	174	95	460	90	65
25	45	62	38	31	100	73	69	180	91	306	95	97
26	44	59	38	30	70	73	66	195	86	667	98	116
27	54	57	35	29	70	69	74	280	84	539	94	92
28	57	63	35	28	100	66	102	193	156	260	87	88
29	72	62	35	27	1,000	62	111	159	138	201	82	83
30	69	49	35	27	------	59	124	150	84	166	74	81
31	111	------	35	27	------	58	------	142	------	144	87	------
TOTAL	1,501	1,777	1,365	1,006	2,292	7,446	2,014	11,167	5,655	16,678	5,488	2,884
MEAN	48.4	59.2	44.0	32.5	79.0	240	67.1	360	189	538	177	96.1
MAX	111	119	64	35	1,000	1,500	144	1,730	849	3,880	1,080	272
MIN	39	41	35	27	25	58	42	142	84	75	74	65
CFSM	.05	.07	.05	.04	.09	.27	.07	.40	.21	.60	.20	.11
IN.	.06	.07	.06	.04	.09	.31	.08	.46	.23	.69	.23	.12
AC-FT	2,980	3,520	2,710	2,000	4,550	14,770	3,990	22,150	11,220	33,080	10,890	5,720

CAL YR 1971 TOTAL 113,764 MEAN 312 MAX 18,000 MIN 35 CFSM .35 IN 4.70 AC-FT 225,700
WTR YR 1972 TOTAL 59,273 MEAN 162 MAX 3,880 MIN 25 CFSM .18 IN 2.45 AC-FT 117,600

PEAK DISCHARGE (BASE, 2,500 CFS).--May 1 (2000) 2,930 cfs (10.07 ft); July 17 (2030) 8,720 cfs (16.93 ft).

06604000 SPIRIT LAKE NEAR ORLEANS, IOWA

LOCATION.--Lat 43°26'11" (revised), long 95°07'25", in NE1/4 NW1/4 sec.20, T.100 N., R.36 W., Dickinson County, 2.3 miles upstream from lake outlet and 2.3 miles northwest of Orleans.

DRAINAGE AREA.--75.6 sq mi.

PERIOD OF RECORD.--May 1933 to current year (fragmentary prior to 1951). Prior to October 1949, published as "at Orleans".

GAGE.--Water-stage recorder. Datum of gage is 1,387.25 ft above mean sea level, 90.0 ft above Iowa Lake Survey datum, and 14.2 ft below crest of spillway. Prior to July 6, 1950, nonrecording gage or water-stage recorder at various sites near outlet, all at present datum.

EXTREMES.--Current year: Maximum gage height, 14.51 ft June 9; minimum, 13.17 ft Oct. 17.

Period of record: Maximum gage height observed, 15.74 ft June 19, 1944; minimum observed, 6.75 ft Oct. 20, 1935.

REMARKS.--Lake is formed by concrete dam with ungated spillway at elevation 1,401.4 ft above mean sea level. Dam constructed in 1969. A previous outlet works had been constructed in 1944. Lake is used for conservation and recreation. Area of lake is approximately 5,700 acres. Records of water temperatures for the current year are published in Part 2 of this report.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.35	13.43	13.45	13.50	13.48	13.48	13.70	13.95	14.40	14.20	14.40	14.08
2	13.37	13.42	13.45	13.50	13.50		13.70	14.05	14.40	14.19	14.39	14.06
3	13.35	13.41	13.45	13.49	13.50		13.71	14.06	14.41	14.17	14.37	14.04
4	13.34	13.41	13.46	13.50	13.50		13.71	14.07	14.40	14.15	14.35	14.02
5	13.32	13.39	13.46	13.50	13.49		13.71	14.10	14.40	14.13	14.35	14.02
6	13.30	13.36	13.46	13.50	13.49		13.72	14.14	14.40	14.14	14.37	14.03
7	13.29	13.36	13.46	13.50	13.48		13.72	14.15	14.43	14.14	14.36	14.05
8	13.26	13.35	13.45	13.50	13.49		13.71	14.15	14.46	14.15	14.34	14.03
9	13.26	13.35	13.47	13.50	13.49	13.51	13.69	14.16	14.47	14.16	14.33	14.01
10	13.24	13.35	13.47	13.50	13.49	13.51	13.70	14.17	14.44	14.14	14.31	14.00
11	13.23	13.35	13.47	13.49	13.49	13.52	13.71	14.18	14.39	14.13	14.31	14.00
12	13.22	13.35	13.46	13.49	13.49	13.53	13.70	14.20	14.38	14.17	14.31	14.00
13	13.22	13.34	13.45	13.49	13.49	13.55	13.69	14.25	14.37	14.16	14.30	14.00
14	13.20	13.32	13.45	13.49	13.49	13.56	13.71	14.27	14.37	14.19	14.29	13.98
15	13.20	13.35	13.45	13.49	13.49	13.58	13.71	14.28	14.36	14.18	14.28	13.97
16	13.19	13.39	13.45	13.49	13.50	13.59	13.69	14.28	14.34	14.17	14.27	13.95
17	13.18	13.43	13.45	13.49	13.50	13.60	13.67	14.29	14.34	14.24	14.26	13.95
18	13.22	13.45	13.45	13.49	13.50	13.61	13.68	14.29	14.33	14.25	14.25	13.94
19	13.24	13.44	13.44	13.48	13.49	13.62	13.67	14.29	14.33	14.24	14.24	13.93
20	13.24	13.44	13.44	13.48	13.49	13.63	13.67	14.29	14.32	14.41	14.22	13.95
21	13.25	13.44	13.44	13.48	13.49	13.67	13.78	14.28	14.30	14.45	14.20	13.96
22	13.25	13.42	13.44	13.49	13.49	13.67	13.77	14.27	14.28	14.46	14.19	13.93
23	13.24	13.42	13.43	13.49	13.49	13.67	13.76	14.31	14.27	14.47	14.16	13.90
24	13.23	13.42	13.43	13.50	13.48	13.67	13.77	14.33	14.26	14.47	14.13	13.89
25	13.22	13.42	13.43	13.49	13.48	13.68	13.76	14.34	14.25	14.45	14.14	13.93
26	13.22	13.44	13.43	13.49	13.48	13.67	13.75	14.34	14.23	14.47	14.13	13.94
27	13.29	13.44	13.45	13.49	13.48	13.69	13.78	14.35	14.24	14.45	14.12	13.92
28	13.33	13.46	13.46	13.49	13.48	13.69	13.83	14.36	14.23	14.43	14.11	13.90
29	13.34	13.47	13.47	13.49	13.48	13.70	13.85	14.41	14.23	14.43	14.10	13.89
30	13.40	13.45	13.50	13.49	------	13.70	13.88	14.42	14.23	14.41	14.09	13.87
31	13.43	------	13.50	13.49	------	13.70	------	14.40	------	14.40	14.09	------
MEAN	13.27	13.40	13.45	13.49	13.49		13.73	14.24	14.34	14.28	14.25	13.97
MAX	13.43	13.47	13.50	13.50	13.50		13.88	14.42	14.47	14.47	14.40	14.08
MIN	13.18	13.32	13.43	13.48	13.48		13.67	13.95	14.23	14.13	14.09	13.87

06604200 WEST OKOBOJI LAKE AT LAKESIDE LABORATORY NEAR MILFORD, IOWA

LOCATION.--Lat 43°22'43", long 95°10'52" (revised), in NE1/4 SW1/4 sec.23, T.99 N., R.37 W., Dickinson County, at pumping station of Lakeside Laboratory on west shore, 2.3 miles upstream from lake outlet and 3.8 miles northwest of Milford.

DRAINAGE AREA.--125 sq mi.

PERIOD OF RECORD.--May 1933 to current year. Prior to October 1937, published as "at Arnolds Park". Prior to October 1966, published as Okoboji Lake at Lakeside Laboratory near Milford.

GAGE.--Water-stage recorder. Datum of gage is 1,391.76 ft above mean sea level, 94.51 ft above Iowa Lake Survey datum, and about 4.0 ft below crest of spillway. Prior to June 17, 1938, nonrecording gage at State Pier at Arnolds Park at same datum.

EXTREMES.--Current year: Maximum gage height, 4.53 ft July 20; minimum, 3.24 ft Oct. 17.

Period of record: Maximum gage height, 6.18 ft July 7, 1962; minimum observed, 0.20 ft Sept. 20, 1959.

REMARKS.--Lake is formed by concrete dam with ungated spillway at elevation 1,395.8 ft above mean sea level. Lake is used for conservation and recreation. Area of lake is approximately 3,900 acres.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.42	3.52	3.45	3.51	3.53		3.92	4.12	4.23	4.08	4.34	4.01
2	3.44	3.50	3.45	3.51	3.55		3.92	4.16	4.23	4.07	4.33	4.00
3	3.41	3.47	3.45	3.51	3.55		3.87	4.19	4.22	4.06	4.33	3.98
4	3.40	3.45	3.45	3.51	3.55		3.87	4.22	4.22	4.04	4.32	3.97
5	3.39	3.43	3.45	3.52	3.55		3.88	4.23	4.21	4.02	4.30	3.96
6	3.39	3.41	3.46	3.52	3.55		3.89	4.24	4.21	4.04	4.28	4.02
7	3.37	3.40	3.46	3.52	3.55		3.88	4.24	4.24	4.04	4.26	4.04
8	3.36	3.38	3.46	3.52	3.55		3.88	4.28	4.27	4.05	4.24	4.02
9	3.35	3.37	3.46	3.52	3.55	3.68	3.88	4.27	4.27	4.05	4.25	4.00
10	3.32	3.37	3.46	3.52	3.56	3.72	3.88	4.28	4.25	4.04	4.24	4.00
11	3.31	3.37	3.46	3.52	3.57	3.74	3.90	4.30	4.19	4.04	4.20	4.00
12	3.29	3.37	3.45	3.52	3.57	3.78	3.88	4.30	4.19	4.18	4.20	4.00
13	3.28	3.37	3.45	3.52	3.57	3.80	3.85	4.34	4.17	4.20	4.20	4.00
14	3.26	3.36	3.45	3.52	3.57	3.83	3.86	4.34	4.18	4.25	4.18	3.99
15	3.26	3.38	3.45	3.52	3.57	3.84	3.86	4.32	4.17	4.25	4.17	3.97
16	3.25	3.41	3.45	3.52	3.56	3.85	3.87	4.32	4.15	4.23	4.16	3.95
17	3.25	3.46	3.45	3.52	3.56	3.86	3.84	4.32	4.15	4.29	4.16	3.96
18	3.28	3.47	3.45	3.52	3.56	3.86	3.83	4.32	4.14	4.30	4.14	3.95
19	3.31	3.45	3.44	3.51	3.56	3.87	3.84	4.31	4.14	4.28	4.12	3.95
20	3.31	3.45	3.44	3.51	3.56	3.86	3.86	4.31	4.14	4.45	4.10	3.98
21	3.31	3.45	3.43	3.51	3.56	3.87	3.93	4.30	4.13	4.51	4.09	3.98
22	3.31	3.43	3.44	3.52	3.56	3.92	3.95	4.27	4.12	4.50	4.09	3.96
23	3.30	3.42	3.45	3.52	3.56	3.93	3.95	4.29	4.11	4.50	4.06	3.93
24	3.30	3.43	3.45	3.53	3.56	3.90	3.95	4.29	4.10	4.48	4.03	3.93
25	3.29	3.43	3.44	3.53	3.57	3.89	3.95	4.29	4.09	4.46	4.06	3.99
26	3.28	3.45	3.44	3.53		3.89	3.94	4.28	4.08	4.46	4.05	3.99
27	3.36	3.47	3.47	3.53		3.88	3.99	4.28	4.09	4.43	4.03	3.97
28	3.41	3.46	3.47	3.53		3.89	4.04	4.28	4.11	4.40	4.02	3.96
29	3.42	3.47	3.47	3.53		3.90	4.05	4.28	4.11	4.38	4.02	3.94
30	3.48	3.46	3.51	3.53	------	3.90	4.09	4.28	4.11	4.35	4.02	3.92
31	3.51	------	3.51	3.53	------	3.90	------	4.26	------	4.35	4.02	------
MEAN	3.34	3.43	3.46	3.52			3.91	4.27	4.17	4.25	4.16	3.98
MAX	3.51	3.52	3.51	3.53			4.09	4.34	4.27	4.51	4.34	4.04
MIN	3.25	3.36	3.43	3.51			3.83	4.12	4.08	4.02	4.02	3.92

06605600 LITTLE SIOUX RIVER AT GILLETT GROVE, IOWA

LOCATION.--Lat 43°01'06", long 95°02'34", in SW1/4 NE1/4 sec.25, T.95 N., R.36 W., Clay County, on left bank 5 ft downstream from bridge on county highway B53, 0.4 mile northwest of Gillett Grove, 0.9 mile above Elk Creek, and at mile 146.1.
DRAINAGE AREA.--1,334 sq mi.
PERIOD OF RECORD.--June 1958 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,266.84 ft above mean sea level.
AVERAGE DISCHARGE.--14 years, 372 cfs (3.79 inches per year, 269,500 acre-ft per year); median of yearly mean discharges, 290 cfs (3.0 inches per year, 210,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 2,660 cfs May 4 (gage height, 10.43 ft); maximum gage height, 10.53 ft Mar. 14 (backwater from ice); minimum daily discharge, 14 cfs Feb. 12-20.
Period of record: Maximum discharge, 20,200 cfs Apr. 7, 1965 (gage height, 18.67 ft); minimum daily, 1.0 cfs Feb. 3-27, 1959.
Flood of June 9, 1953 reached a discharge of about 24,000 cfs (estimated on basis of interpretive flood studies).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Apr. 22 to July 25; stage-discharge relation affected by ice Nov. 7-10, Nov. 21 to Dec. 2, Dec. 9 to Mar. 15).

3.04	42	9.0	1,350
3.5	96	11.0	2,280
5.0	326	12.0	3,100
7.0	755		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	235	156	57	23	172	229	1,080	674	268	530	108
2	100	191	168	56	22	200	225	1,510	651	250	464	110
3	91	157	159	58	20	226	221	2,180	623	226	420	109
4	69	136	150	58	19	256	211	2,600	598	209	466	107
5	57	126	147	57	18	290	203	2,270	635	190	400	106
6	51	107	148	57	17	340	198	2,060	674	175	420	106
7	48	77	145	57	17	600	196	2,060	657	163	422	100
8	47	106	140	56	16	800	187	1,930	694	156	522	93
9	46	116	138	56	15	850	179	1,670	798	148	511	101
10	47	108	136	56	15	840	174	1,440	752	139	412	105
11	44	102	134	56	15	810	172	1,280	689	132	344	104
12	47	96	132	56	14	900	174	1,190	608	186	295	93
13	46	94	130	53	14	1,040	175	1,270	550	454	270	81
14	45	95	126	50	14	1,520	171	1,450	544	603	241	78
15	43	90	118	48	14	1,180	170	1,490	494	713	217	74
16	42	108	112	47	14	755	168	1,360	456	592	186	71
17	44	132	112	44	14	764	162	1,230	426	498	164	70
18	49	188	112	42	14	739	153	1,120	409	566	151	67
19	60	207	112	40	14	563	155	1,020	405	634	140	67
20	56	201	112	39	14	453	156	932	393	788	128	70
21	57	168	110	37	15	426	215	866	366	1,220	120	78
22	54	150	106	36	16	449	330	813	341	1,610	113	86
23	52	160	100	35	18	407	391	775	312	1,700	110	88
24	51	168	92	33	20	354	358	788	295	1,370	109	89
25	53	158	85	32	23	319	333	793	284	1,080	116	95
26	48	158	78	31	25	295	308	781	264	910	129	120
27	86	164	71	30	27	284	300	742	251	828	117	137
28	118	160	65	28	80	270	483	723	289	802	107	131
29	110	152	61	26	130	253	724	714	433	640	101	111
30	152	146	60	25	------	239	878	699	366	600	94	102
31	262	------	59	24	------	231	------	701	------	570	101	------
TOTAL	2,144	4,256	3,574	1,380	677	16,825	7,999	39,537	14,931	18,420	7,920	2,857
MEAN	69.2	142	115	44.5	23.3	543	267	1,275	498	594	255	95.2
MAX	262	235	168	58	130	1,520	878	2,600	798	1,700	530	137
MIN	42	77	59	24	14	172	153	699	251	132	94	67
CFSM	.05	..11	.09	.03	.02	.41	.20	.96	.37	.45	.19	.07
IN.	.06	.12	.10	.04	.02	.47	.22	1.10	.42	.51	.22	.08
AC-FT	4,250	8,440	7,090	2,740	1,340	33,370	15,870	78,420	29,620	36,540	15,710	5,670

CAL YR 1971 TOTAL 218,827 MEAN 600 MAX 5,630 MIN 42 CFSM .45 IN 6.10 AC-FT 434,000
WTR YR 1972 TOTAL 120,520 MEAN 329 MAX 2,600 MIN 14 CFSM .25 IN 3.36 AC-FT 239,100

PEAK DISCHARGE (BASE, 1,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHAPGE
3-14	--	--	* 2,520	5-4	0915	10.43	2,660
7-23	0545	8.87	1,740				

* About

06606600 LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA

LOCATION.--Lat 42°28'20", long 95°47'49", in NE1/4 NW1/4 sec.1, T.88 N., R.43 W., Woodbury County, on right bank 10 ft upstream from bridge on State Highway 31, 0.3 mile upstream from Bacon Creek, 0.5 mile west of Correctionville, 0.8 mile downstream from Pierson Creek, and at mile 56.0.

DRAINAGE AREA.--2,500 sq mi.

PERIOD OF RECORD.--May 1918 to July 1925, October 1928 to July 1932, June 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 1,096.49 ft above mean sea level. May 28, 1918, to July 1, 1925 and Oct. 29, 1928 to July 15, 1929, nonrecording gage 0.2 mile downstream at datum 1.25 ft lower. July 16, 1929, to July 2, 1932, and June 15, 1936, to Nov. 7, 1938, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--45 years (1918-24, 1928-31, 1936-72), 681 cfs (3.70 inches per year, 493,400 acre-ft per year); median of yearly mean discharge, 520 cfs (2.9 inches per year, 380,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 4,130 cfs July 17 (gage height, 14.46 ft); maximum gage height, 14.81 ft Mar. 8 (backwater from ice); minimum daily discharge, 50 cfs Feb. 11-14.

Period of record: Maximum discharge, 29,800 cfs Apr. 7, 1965 (gage height, 25.86 ft); minimum daily, 2.6 cfs July 17, 25, 1936, caused by construction dam above gage.

Flood of June 23 or 24, 1891, reached a stage of 29.34 ft, present datum, from levels to floodmark by Soil Conservation Service (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 856: 1919. WSP 1240: 1924-25, 1931, 1932 (M), 1937, 1945 (M), 1947 (M), 1949 (M). WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 1 to Nov. 6, Nov. 10 to Dec. 8, May 25 to June 11, Aug. 29 to Sept. 23; stage-discharge relation affected by ice Nov. 7-9, Dec. 9 to Mar. 12).

Oct. 1 to Feb. 1		Feb. 2 to Sept. 30	
4.9	84	5.1	154
5.5	172	6.0	332
6.6	402	8.0	958
		11.0	2,250
		13.0	3,300

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	347	266	130	68	1,000	511	1,480	968	562	1,320	247
2	110	342	250	130	66	800	482	1,880	919	583	885	233
3	104	383	266	130	64	700	468	2,450	890	538	770	227
4	114	352	300	130	62	650	454	2,500	894	471	712	217
5	106	312	286	125	60	600	444	2,610	1,150	422	668	210
6	101	268	299	125	58	1,200	431	2,940	1,190	404	809	210
7	122	190	292	125	56	2,200	416	3,090	1,280	411	1,270	264
8	113	120	278	125	54	2,300	400	2,870	1,290	350	1,300	258
9	103	200	180	125	52	2,100	396	2,640	1,460	335	1,230	230
10	99	201	190	125	51	1,900	380	2,480	1,380	319	1,190	244
11	98	199	200	125	50	1,800	368	2,310	1,300	310	1,070	279
12	96	213	185	125	50	1,600	370	2,110	1,190	1,040	930	306
13	95	210	175	120	50	2,230	366	2,050	1,080	468	811	289
14	95	203	165	115	50	2,080	354	2,000	988	481	713	257
15	93	192	155	110	51	1,520	349	2,010	887	588	630	232
16	92	199	150	105	52	1,570	349	2,030	845	709	563	219
17	92	226	145	100	53	1,980	337	2,000	1,020	2,290	503	201
18	100	258	145	96	54	1,510	332	1,910	781	1,220	448	192
19	119	264	140	94	55	1,290	319	1,740	725	1,010	402	181
20	117	299	140	92	56	1,240	305	1,600	696	1,070	367	190
21	120	332	140	90	58	1,130	425	1,470	662	1,070	347	207
22	126	332	135	88	57	1,030	498	1,350	635	1,170	323	185
23	129	321	135	86	56	948	535	1,270	594	1,380	303	169
24	131	308	135	84	58	893	584	1,240	561	1,510	284	168
25	130	290	135	82	56	822	621	1,210	525	1,540	299	404
26	128	290	130	80	55	747	607	1,160	490	1,490	308	396
27	153	306	130	78	54	692	598	1,150	471	1,270	295	409
28	182	306	130	76	80	644	694	1,170	849	1,110	286	497
29	181	306	130	74	180	603	762	1,100	509	1,000	281	458
30	253	295	130	72	------	568	909	1,060	449	939	258	409
31	356	------	130	70	------	538	------	1,010	------	879	260	------
TOTAL	3,971	8,064	5,667	3,232	1,766	38,885	14,064	57,890	26,678	26,939	19,835	7,988
MEAN	128	269	183	104	60.9	1,254	469	1,867	889	869	640	266
MAX	356	383	300	130	180	2,300	909	3,090	1,460	2,290	1,320	497
MIN	92	120	130	70	50	538	305	1,010	449	310	258	168
CFSM	.05	.11	.07	.04	.02	.50	.19	.75	.36	.35	.26	.11
IN.	.06	.12	.08	.05	.03	.58	.21	.86	.40	.40	.30	.12
AC-FT	7,880	15,990	11,240	6,410	3,500	77,130	27,900	114,800	52,920	53,430	39,340	15,840

CAL YR 1971 TOTAL 451,601 MEAN 1,237 MAX 15,400 MIN 92 CFSM .49 IN 6.72 AC-FT 895,800
WTR YR 1972 TOTAL 214,979 MEAN 587 MAX 3,090 MIN 50 CFSM .23 IN 3.20 AC-FT 426,400

PEAK DISCHARGE (BASE, 4,000 CFS).--July 17 (0900) 4,130 cfs (14.46 ft).

06607000 ODEBOLT CREEK NEAR ARTHUR, IOWA

LOCATION.--Lat 42°20'10", long 95°22'52", in SE1/4 NE1/4 sec.21, T.87 N., R.39 W., Ida County, near center of span on downstream side of bridge on county highway M27, 700 ft south of State Highway 175, 1.0 mile downstream from Hoskins Creek, 1.8 miles west of Arthur, 4.6 miles southeast of Ida Grove, and 6.5 miles upstream from mouth.
DRAINAGE AREA.--39.3 sq mi.
PERIOD OF RECORD.--October 1957 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,258.57 ft above mean sea level.
AVERAGE DISCHARGE.--15 years, 14.8 cfs (5.11 inches per year, 10,720 acre-ft per year); median of yearly mean discharges, 13 cfs (4.5 inches per year, 9,400 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 1,540 cfs July 17 (gage height, 9.93 ft); minimum daily, 0.58 cfs Jan. 1-3.

Period of record: Maximum discharge, 5,200 cfs Aug. 30, 1962 (gage height, 13.78 ft); maximum gage height, 14.11 ft Mar. 31, 1965 (backwater from ice); minimum daily discharge, 0.2 cfs Jan. 2 to Feb. 27, 1959.

Flood of July 3, 1951, reached a stage of 11.96 ft, from floodmark (discharge, 4,320 cfs, from contracted-opening measurement of peak flow).
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	3.2	2.2	.58	.88	142	5.3	52	14	32	106	10
2	.84	2.7	1.9	.58	.87	122	5.5	38	11	29	74	9.4
3	.84	2.5	1.8	.58	.86	92	5.8	28	10	26	49	9.0
4	.84	2.2	1.7	.59	.86	76	5.5	24	10	23	38	9.0
5	.84	2.2	1.8	.60	.86	62	5.0	23	11	23	34	8.3
6	.84	2.3	1.8	.60	.86	75	6.3	82	9.4	21	35	8.3
7	.84	2.8	1.8	.60	.86	85	5.0	50	98	20	36	7.6
8	.90	2.6	1.8	.61	.86	73	4.2	38	77	18	34	7.6
9	.90	2.3	2.0	.62	.85	66	3.2	30	18	16	28	7.3
10	.90	2.0	2.7	.63	.85	59	2.6	26	12	14	25	22
11	.90	2.0	3.3	.64	.85	55	2.0	24	11	12	24	87
12	.90	2.0	2.9	.66	.84	52	2.2	23	11	12	22	52
13	.90	1.9	2.5	.68	.84	24	2.3	37	187	10	22	70
14	.90	1.9	2.2	.70	.84	6.0	2.2	31	22	10	21	61
15	.90	1.9	1.9	.72	.84	6.3	2.3	22	14	9.4	20	36
16	.90	2.0	1.7	.74	.84	5.5	2.9	20	11	8.7	19	18
17	.90	3.0	1.6	.76	.84	5.5	2.4	19	312	639	17	15
18	1.2	2.8	1.5	.78	.85	6.3	2.8	16	122	148	17	15
19	1.5	2.4	1.3	.81	.85	6.0	2.6	15	48	79	16	13
20	1.2	2.2	1.2	.83	.85	6.6	2.6	15	37	66	14	13
21	1.2	2.3	1.1	.85	.86	7.6	16	15	30	97	13	13
22	1.2	2.3	1.0	.87	.88	8.7	7.6	14	26	47	12	15
23	1.1	2.2	.96	.88	.90	6.6	5.8	15	23	35	11	13
24	1.1	2.2	.90	.90	.92	5.3	4.5	12	22	308	11	13
25	1.1	2.0	.83	.91	.94	5.5	4.0	11	22	62	15	13
26	1.2	2.2	.79	.92	.96	5.8	5.0	36	21	67	12	13
27	9.5	2.0	.74	.93	.98	6.0	11	133	137	47	11	13
28	2.7	1.9	.71	.92	1.0	6.0	22	30	271	41	10	13
29	22	2.2	.66	.91	10	5.5	14	37	53	37	9.8	13
30	32	2.3	.64	.90	------	5.3	18	19	40	34	9.8	12
31	5.8	------	.61	.89	------	5.3	------	16	------	33	11	------
TOTAL	97.74	68.5	48.54	23.19	34.49	1,092.8	180.6	951	1,690.4	2,024.1	776.6	609.5
MEAN	3.15	2.28	1.57	.75	1.19	35.3	6.02	30.7	56.3	65.3	25.1	20.3
MAX	32	3.2	3.3	.93	10	142	22	133	312	639	106	87
MIN	.84	1.9	.61	.58	.84	5.3	2.0	11	9.4	8.7	9.8	7.3
CFSM	.08	.06	.04	.02	.03	.90	.15	.78	1.43	1.66	.64	.52
IN.	.09	.06	.05	.02	.03	1.03	.17	.90	1.60	1.92	.74	.58
AC-FT	194	136	96	46	68	2,170	358	1,890	3,350	4,010	1,540	1,210

CAL YR 1971 TOTAL 3,701.45 MEAN 10.1 MAX 830 MIN .55 CFSM .26 IN 3.50 AC-FT 7,340
WTR YR 1972 TOTAL 7,597.46 MEAN 20.8 MAX 639 MIN .58 CFSM .53 IN 7.19 AC-FT 15,070

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
6-17	1300	8.63	847	7-17	1330	9.93	1,540
6-28	0200	8.20	754	7-24	0400	8.14	749

06607200 MAPLE RIVER AT MAPLETON, IOWA

LOCATION.--Lat 42°09'28", long 95°48'27", in SE1/4 SE1/4 sec.23, T.85 N., R.43 W., Monona County, on right bank on downstream side of bridge on State Highway 175, 80 ft downstream from Chicago & North Western Railway Co. bridge, 0.5 mile southwest of Mapleton, 0.8 mile downstream from Wilsey Creek, 2.0 miles upstream from McClarey Creek, and 16.0 miles upstream from mouth.

DRAINAGE AREA.--669 sq mi.

PERIOD OF RECORD.--October 1941 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,085.86 ft above mean sea level. See WSP 1730 for history of changes prior to Sept. 20, 1956.

AVERAGE DISCHARGE.--31 years, 222 cfs (4.51 inches per year, 160,800 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 6,310 cfs June 13 (gage height, 10.28 ft); minimum daily, 11 cfs Feb. 9-12.

Period of record: Maximum discharge, 15,700 cfs Feb. 19, 1971 (gage height, 15.17 ft); maximum gage height, 22.1 ft June 12, 1950; no flow Sept. 21, 22, 1945 caused by temporary dam above gage.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1310: 1942 (M), 1946 (M), 1948 (M). WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used June 14 to July 18; stage-discharge relation affected by ice Nov. 7-9, Dec. 9 to Feb. 29, Mar. 3-6).

.98	32	4.0	1,040
1.3	80	6.0	2,150
1.9	220	7.0	2,850
2.5	408		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	131	47	19	13	1,970	68	369	144	184	174	122
2	35	95	45	19	13	426	66	469	127	166	155	116
3	34	75	49	19	13	250	76	458	118	154	433	111
4	33	61	48	18	12	180	76	355	118	140	338	107
5	32	57	46	18	12	140	75	316	127	122	291	111
6	32	49	48	18	12	600	71	458	171	152	294	107
7	32	32	48	18	12	2,230	69	455	248	171	316	105
8	33	32	40	18	12	796	69	379	520	142	312	122
9	33	48	15	18	11	524	68	328	268	133	245	116
10	34	52	40	18	11	355	65	294	174	127	234	122
11	33	49	30	18	11	303	66	273	135	122	231	169
12	32	45	15	18	11	335	69	328	215	156	217	285
13	32	43	55	17	12	702	71	332	1,830	174	192	294
14	33	42	40	16	12	303	73	322	535	159	176	203
15	33	38	36	16	12	237	75	312	279	179	164	164
16	33	38	32	16	12	223	84	279	223	140	149	149
17	34	48	28	16	13	176	69	234	1,690	122	140	140
18	42	58	26	15	13	152	69	212	848	853	131	131
19	52	57	25	15	13	135	66	195	458	684	124	120
20	50	50	24	15	18	127	68	176	291	505	120	124
21	48	48	23	15	60	131	127	166	240	451	111	124
22	45	43	22	15	50	156	142	159	223	369	107	118
23	42	35	22	14	60	154	159	156	195	332	95	113
24	39	40	22	14	100	111	113	171	156	859	113	107
25	37	50	22	14	80	103	91	169	152	505	135	107
26	37	50	21	14	70	99	76	156	140	404	161	303
27	66	48	20	14	60	97	89	202	133	316	138	237
28	95	46	20	14	300	85	164	240	770	259	118	223
29	101	57	20	13	1,500	87	198	171	376	175	109	206
30	189	40	20	13	------	82	209	161	209	138	107	166
31	200	------	19	13	------	75	------	176	------	182	129	------
TOTAL	1,610	1,557	963	498	2,528	11,344	2,781	8,471	11,113	8,575	5,759	4,622
MEAN	51.9	51.9	31.1	16.1	87.2	366	92.7	273	370	277	186	154
MAX	200	131	55	19	1,500	2,230	209	469	1,830	859	433	303
MIN	32	32	15	13	11	75	65	156	118	122	95	105
CFSM	.08	.08	.05	.02	.13	.55	.14	.41	.55	.41	.28	.23
IN.	.09	.09	.05	.03	.14	.63	.15	.47	.62	.48	.32	.26
AC-FT	3,190	3,090	1,910	988	5,010	22,500	5,520	16,800	22,040	17,010	11,420	9,170

CAL YR 1971 TOTAL 94,247 MEAN 258 MAX 13,200 MIN 15 CFSM .39 IN 5.24 AC-FT 186,900
WTR YR 1972 TOTAL 59,821 MEAN 163 MAX 2,230 MIN 11 CFSM .24 IN 3.33 AC-FT 118,700

PEAK DISCHARGE (BASE, 4,000 CFS).--June 13 (0300) 6,310 cfs (10.28 ft); June 17 (1600) 4,930 cfs (9.15 ft).

06607500 LITTLE SIOUX RIVER NEAR TURIN, IOWA

LOCATION.--Lat 41°57'52", long 95°58'21", in NW1/4 NE1/4 sec.33, T.83 N., R.44 W., Monona County, on left bank on downstream side of bridge on county highway E51, 1.0 mile east of gaging station on Monona-Harrison ditch near Turin, 2.5 miles downstream from Maple River, 3.8 miles south of Turin, 6.2 miles northeast of Blencoe, and at mile 13.5.

DRAINAGE AREA.--3,526 sq mi. Prior to Jan. 15, 1958, 4,426 sq mi (combined area above this station and Monona-Harrison ditch station 1.0 mile west).

PERIOD OF RECORD.--January 1958 to current year. April 1939 to May 1942 at site 4.7 miles downstream published as "near Blencoe", June 1942 to January 1958 at site 1,200 ft east on old river channel; records not equivalent owing to diversion into Monona-Harrison ditch through equalizer ditch 1.5 miles upstream.

GAGE.--Water-stage recorder. Datum of gage is 1,019.85 ft above mean sea level (Corps of Engineers bench mark). Prior to July 15, 1958, nonrecording gages near present site at different datums. July 15 to Sept. 3, 1958, nonrecording gage at present site and datum.

AVERAGE DISCHARGE.--14 years, 1,039 cfs (4.00 inches per year, 752,800 acre-ft per year); median of yearly mean discharges, 780 cfs (3.0 inches per year, 562,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 7,770 cfs July 18 (gage height, 17.70 ft); maximum gage height, 21.51 ft Mar. 1 (backwater from ice); minimum daily discharge, 60 cfs Feb. 11-14.

Period of record: Maximum discharge, about 30,000 cfs Feb. 19, 1971 (gage height, 27.44 ft, backwater from ice); minimum daily, 22 cfs Feb. 10-22, 1959.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184	530	359	140	71	500	638	1,500	1,240	756	1,880	463
2	157	481	353	135	70	1,400	604	2,250	1,200	976	2,790	441
3	141	449	333	130	69	1,100	577	2,610	1,150	860	1,490	403
4	137	468	349	120	68	900	549	2,910	1,120	811	1,280	396
5	145	446	371	120	67	800	530	2,890	1,200	740	1,210	390
6	147	382	370	120	66	700	514	3,340	1,370	723	1,160	388
7	149	321	373	120	65	1,500	485	3,490	1,490	741	1,300	378
8	163	250	330	120	64	2,500	465	3,500	2,000	695	1,820	411
9	163	200	290	120	63	2,500	453	3,180	1,800	603	1,690	440
10	157	288	260	120	62	2,200	432	2,960	1,740	589	1,590	485
11	154	282	230	120	60	2,000	408	2,790	1,590	635	1,560	630
12	152	263	240	120	60	2,560	404	2,590	1,490	643	1,410	633
13	152	276	250	120	60	3,260	396	2,600	2,970	1,320	1,260	584
14	150	277	230	115	60	2,920	378	2,410	1,760	684	1,140	530
15	149	259	210	110	61	2,310	386	2,400	1,290	688	1,050	475
16	148	254	200	105	62	1,900	395	2,410	1,130	809	956	433
17	143	270	190	100	63	1,980	403	2,390	1,970	4,050	900	404
18	154	305	180	96	64	2,180	381	2,310	2,530	5,630	828	376
19	152	326	180	92	65	1,670	353	2,150	1,260	2,240	768	363
20	157	343	180	90	70	1,490	351	1,960	1,080	1,720	709	366
21	161	355	180	88	85	1,400	455	1,790	1,030	1,680	659	372
22	160	398	180	86	80	1,310	550	1,630	983	1,590	624	360
23	161	414	180	84	75	1,210	613	1,510	941	1,650	608	337
24	160	399	180	82	90	1,130	648	1,450	887	2,530	587	328
25	158	393	175	80	80	1,070	692	1,440	867	2,360	587	392
26	160	387	170	78	75	1,010	717	1,400	821	2,280	614	626
27	193	369	165	76	72	912	747	1,380	780	2,000	588	603
28	233	390	160	75	100	840	898	1,450	1,660	1,680	535	577
29	283	389	155	74	200	771	923	1,390	1,310	1,470	496	630
30	353	372	150	73	------	720	1,020	1,310	827	1,360	483	588
31	498	------	145	72	------	677	------	1,270	------	1,310	473	------
TOTAL	5,574	10,536	7,318	3,181	2,147	47,420	16,365	68,660	41,486	45,823	33,045	13,802
MEAN	180	351	236	103	74.0	1,530	546	2,215	1,383	1,478	1,066	460
MAX	498	530	373	140	200	3,260	1,020	3,500	2,970	5,630	2,790	633
MIN	137	200	145	72	60	500	351	1,270	780	589	473	328
CFSM	.05	.10	.07	.03	.02	.43	.15	.63	.39	.42	.30	.13
IN.	.06	.11	.08	.03	.02	.50	.17	.72	.44	.48	.35	.15
AC-FT	11,060	20,900	14,520	6,310	4,260	94,060	32,460	136,200	82,290	90,890	65,540	27,380

CAL YR 1971 TOTAL 550,204 MEAN 1,507 MAX 26,000 MIN 137 CFSM .43 IN 5.80 AC-FT 1,091,000
WTR YR 1972 TOTAL 295,357 MEAN 807 MAX 5,630 MIN 60 CFSM .23 IN 3.12 AC-FT 585,800

PEAK DISCHARGE (BASE, 4,500 CFS).--June 13 (0645) 5,360 cfs (15.39 ft); July 18 (0015) 7,770 cfs (17.70 ft).

06608500 SOLDIER RIVER AT PISGAH, IOWA

LOCATION.--Lat 41°49'52", long 95°55'50", in NW1/4 NE1/4 sec.14, T.81 N., R.44 W., Harrison County, on left bank on downstream side of bridge on county highway F20, at west edge of Pisgah, 0.4 mile downstream from Cobb Creek, 0.5 mile upstream from Hogger Ditch, and 13.1 miles upstream from mouth.
DRAINAGE AREA.--407 sq mi.
PERIOD OF RECORD.--March 1940 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,036.53 ft above mean sea level. Prior to Oct. 11, 1954, nonrecording gage at same site and datum with supplementary waterstage recorder operating above 8.2 ft gage height Mar. 2, 1946, to Sept. 24, 1953.
AVERAGE DISCHARGE.--32 years, 123 cfs (4.10 inches per year, 89,110 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 15,000 cfs July 11 (gage height, 21.87 ft); minimum daily, 5.0 cfs Feb. 10,11.
Period of record: Maximum discharge, 22,500 cfs June 12, 1950 (gage height, 28.17 ft); minimum daily, 2 cfs Jan. 2-10, 1945.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 956: 1940 (M). WSP 1240: 1940, 1941 (M), 1947. WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Mar. 9-13, July 12-14; stage-discharge relation affected by ice Nov. 7-9, Nov. 30 to Dec. 2, Dec. 8 to Feb. 28, Mar. 2-7).

4.44	10	6.0	296
4.6	22	7.0	658
4.9	56	8.0	1,230
5.4	143	11.0	3,900

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	81	15	9.0	5.6	959	47	369	43	35	78	49
2	11	48	18	8.5	5.4	200	43	214	35	83	102	45
3	10	34	20	8.0	5.4	160	42	117	41	44	95	41
4	10	29	19	7.5	5.4	140	43	83	43	42	72	39
5	10	25	20	7.0	5.4	120	41	73	47	38	60	42
6	10	23	19	6.8	5.2	180	38	398	43	39	59	39
7	10	16	20	6.6	5.2	580	35	178	36	47	61	36
8	10	20	22	6.6	5.2	134	33	106	213	41	358	35
9	10	22	24	7.0	5.2	99	32	91	76	30	88	34
10	10	24	26	7.5	5.0	83	31	81	47	30	64	158
11	11	22	24	8.5	5.0	84	30	81	41	3,640	57	1,670
12	11	20	22	9.0	5.2	100	30	75	35	755	48	1,980
13	12	19	21	8.5	5.5	354	32	218	772	188	45	271
14	11	19	20	8.0	6.0	195	30	102	286	303	42	128
15	11	17	19	7.5	6.5	108	30	83	102	115	39	97
16	11	17	18	7.0	7.0	93	42	73	67	83	38	83
17	11	30	17	7.0	15	78	39	61	256	261	36	67
18	19	41	16	7.0	40	75	32	54	513	418	35	63
19	34	31	15	6.8	40	66	28	49	124	111	34	60
20	24	24	14	6.6	100	63	31	47	95	86	33	63
21	19	19	14	6.4	90	69	111	44	63	128	34	67
22	16	16	15	6.4	200	73	91	43	47	102	35	57
23	16	18	17	6.2	160	54	57	42	45	73	35	56
24	15	20	19	6.0	300	52	47	48	43	224	41	61
25	15	20	20	6.0	150	49	39	43	49	167	75	63
26	15	21	17	6.0	100	63	36	52	44	847	64	63
27	57	20	15	5.8	70	76	64	88	44	143	51	63
28	78	20	13	5.8	300	56	163	53	44	86	41	63
29	64	21	12	5.6	1,950	49	100	56	39	78	36	64
30	186	15	11	5.6	------	47	75	49	36	70	37	60
31	198	------	10	5.6	------	47	------	47	------	67	45	------
TOTAL	937	752	552	215.8	3,603.2	4,506	1,492	3,118	3,369	8,374	1,938	5,617
MEAN	30.2	25.1	17.8	6.96	124	145	49.7	101	112	270	62.5	187
MAX	198	81	26	9.0	1,950	959	163	398	772	3,640	358	1,980
MIN	10	15	10	5.6	5.0	47	28	42	35	30	33	34
CFSM	.07	.06	.04	.02	.30	.36	.12	.25	.28	.66	.15	.46
IN.	.09	.07	.05	.02	.33	.41	.14	.28	.31	.77	.18	.51
AC-FT	1,860	1,490	1,090	428	7,150	8,940	2,960	6,180	6,680	16,610	3,840	11,140

CAL YR 1971 TOTAL 45,265.0 MEAN 124 MAX 17,000 MIN 7.0 CFSM .30 IN 4.14 AC-FT 89,780
WTR YR 1972 TOTAL 34,474.0 MEAN 94.2 MAX 3,640 MIN 5.0 CFSM .23 IN 3.15 AC-FT 68,380

PEAK DISCHARGE (BASE, 5,000 CFS).--July 11 (1830) 15,000 cfs (21.87 ft); Sept. 12 (0700) 5,420 cfs (12.52 ft).

06609500 BOYER RIVER AT LOGAN, IOWA

LOCATION.--Lat 41°38'33", long 95°46'57" (revised), in SE1/4 NW1/4 sec.19, T.79 N., R.42 W., Harrison County, on left bank 9 ft downstream from Illinois Central Railroad bridge at Logan, 0.4 mile downstream from Elk Grove Creek, 10.5 miles upstream from Willow Creek, and 15.8 miles upstream from mouth.

DRAINAGE AREA.--871 sq mi.

PERIOD OF RECORD.--May 1918 to July 1925, November 1937 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 1,009.38 ft above mean sea level (Chicago and Northwestern Railway Company bench mark). See WSP 1918 for history of changes prior to Oct. 18, 1960.

AVERAGE DISCHARGE.--40 years, 295 cfs (4.60 inches per year, 213,700 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 23,500 cfs Sept. 11 (gage height, 21.76 ft); minimum daily, 15 cfs Feb. 10, 11.

Period of record: Maximum discharge, 25,000 cfs Feb. 19, 1971 (gage height, 22.65 ft, from floodmark); maximum gage height, 25.22 ft Mar. 1, 1965 (backwater from ice); minimum daily discharge, 1.5 cfs July 16, 1938.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 956: 1938-39. WSP 1240: 1918-19, 1920 (M), 1921, 1922 (M), 1924-25, 1938 (M), 1945. WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Apr. 30 to June 13, Aug. 1-12, Sept. 21-30; stage-discharge relation affected by ice Nov. 7, 8, Nov. 30 to Dec. 2, Dec. 8 to Mar. 6).

2.18	20	6.0	1,370
2.5	50	8.0	2,900
3.0	126	12.0	7,450
3.5	240	16.0	13,700
4.5	586		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	232	35	30	18	2,850	82	316	184	257	222	108
2	23	159	40	29	18	850	80	419	173	238	402	115
3	22	115	52	28	18	450	80	402	159	220	508	110
4	22	82	56	27	18	380	84	301	157	191	301	105
5	21	72	54	26	17	550	84	260	189	177	243	103
6	20	60	53	26	17	450	84	470	421	184	218	101
7	20	40	56	26	17	2,180	76	652	213	251	243	95
8	20	42	54	27	16	955	69	440	1,450	191	350	93
9	20	47	52	29	16	458	65	347	752	159	232	100
10	21	56	50	34	15	283	65	292	382	155	196	565
11	22	56	48	30	15	265	66	265	265	242	180	13,400
12	22	53	46	29	16	283	71	283	220	254	170	10,300
13	22	48	44	28	16	298	69	319	1,290	201	159	3,620
14	23	47	42	27	18	289	66	412	1,620	240	150	1,380
15	23	42	40	26	20	201	69	341	967	232	142	840
16	24	41	39	25	20	203	74	295	451	180	130	639
17	24	54	38	25	40	168	69	251	1,100	864	122	492
18	30	72	37	25	100	150	60	248	1,830	3,570	113	409
19	32	72	36	24	60	134	56	208	693	3,210	106	354
20	38	59	35	23	60	119	53	182	489	1,340	100	322
21	38	56	35	22	400	121	106	166	399	720	101	319
22	36	50	36	22	250	126	140	159	341	652	101	280
23	36	48	37	21	150	121	101	157	304	406	103	260
24	36	49	38	20	400	108	86	182	277	1,290	106	254
25	33	59	39	19	350	103	72	198	254	1,120	140	260
26	33	59	42	19	200	103	64	175	243	1,090	150	277
27	56	59	48	19	130	103	88	622	232	652	138	469
28	93	59	42	19	500	119	208	685	1,000	382	126	373
29	113	58	36	19	3,200	103	238	301	860	316	105	334
30	395	45	34	19	------	93	198	257	331	283	100	322
31	448	------	32	19	------	86	------	215	------	240	108	------
TOTAL	1,795	1,991	1,326	762	6,115	12,702	2,723	9,820	17,246	19,507	5,565	36,399
MEAN	57.9	66.4	42.8	24.6	211	410	90.8	317	575	629	180	1,213
MAX	448	232	56	34	3,200	2,850	238	685	1,830	3,570	508	13,400
MIN	20	40	32	19	15	86	53	157	157	155	100	93
CFSM	.07	.08	.05	.03	.24	.47	.10	.36	.66	.72	.21	1.39
IN.	.08	.09	.06	.03	.26	.54	.12	.42	.74	.83	.24	1.55
AC-FT	3,560	3,950	2,630	1,510	12,130	25,190	5,400	19,480	34,210	38,690	11,040	72,200

CAL YR 1971 TOTAL 95,527 MEAN 262 MAX 17,300 MIN 14 CFSM .30 IN 4.08 AC-FT 189,500
WTR YR 1972 TOTAL 115,951 MEAN 317 MAX 13,400 MIN 15 CFSM .36 IN 4.95 AC-FT 230,000

PEAK DISCHARGE (BASE, 6,000 CFS).--Feb. 29 (2300) 6,770 cfs (11.48 ft); Sept. 11 (0700) 23,500 cfs (21.76 ft).

06610000 MISSOURI RIVER AT OMAHA, NEBRASKA

LOCATION.--Lat 41°15'32", long 95°55'20", in SE1/4 NW1/4 sec.23, T.15 N., R.13 E., Douglas County, on right bank on left side of concrete floodwall, at foot of Douglas Street, 275 ft downstream from Interstate 480 Highway bridge in Omaha, and at mile 615.9.
DRAINAGE AREA.--322,800 sq mi, approximately.
PERIOD OF RECORD.--September 1928 to current year. April 1872 to December 1899 (gage heights only) in reports of the Missouri River Commission and since January 1875 (gage heights only) in reports of the U.S. Weather Bureau.
GAGE.--Water-stage recorder. Datum of gage is 958.24 ft above mean sea level. See WSP 1730 for history of changes prior to Sept. 30, 1936.
AVERAGE DISCHARGE.--44 years, 28,700 cfs (20,790,000 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 70,500 cfs Sept. 11 (gage height, 12.57 ft); maximum gage height, 12.64 ft July 18; minimum daily discharge, 5,460 cfs Jan. 18; minimum gage height, 1.57 ft Jan. 18.
Period of record: Maximum discharge, 396,000 cfs Apr. 18, 1952 (gage height, 30.20 ft); minimum, about 2,200 cfs Jan. 6, 1937; minimum gage height observed, -2.77 ft Jan. 10, 1957, result of freezeup.
REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by upstream main-stem reservoirs.
REVISIONS.--WSP 761: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49,500	54,500	51,100	22,200	21,600	39,100	39,000	50,500	50,000	44,200	52,400	51,000
2	49,700	53,900	50,600	22,400	21,600	30,000	43,100	64,200	49,400	46,200	54,900	51,100
3	50,200	55,000	49,100	22,500	20,800	24,200	45,900	55,200	49,700	46,400	53,700	49,900
4	50,500	54,700	47,800	21,500	19,700	24,000	46,900	49,300	50,100	45,500	51,700	48,200
5	50,700	53,800	46,400	20,700	19,200	23,800	46,000	51,500	50,800	44,500	50,200	48,700
6	50,200	55,300	44,300	21,400	19,800	22,700	45,900	56,200	51,600	44,000	50,600	48,500
7	51,600	55,600	41,900	21,700	20,200	32,200	45,700	56,300	50,600	45,000	51,500	48,600
8	52,700	53,500	40,200	22,800	20,500	35,400	45,400	47,900	51,300	46,100	52,400	49,600
9	51,900	54,600	37,400	22,600	20,400	29,800	45,500	44,100	55,600	46,900	51,700	48,500
10	51,400	53,900	34,500	22,600	20,400	28,400	45,300	45,700	54,500	48,100	50,200	49,000
11	49,200	56,400	32,500	22,600	20,000	28,000	44,000	45,000	52,100	48,800	49,800	61,900
12	48,600	55,900	30,700	22,800	20,400	30,600	44,600	45,000	54,400	52,400	49,400	61,200
13	49,800	55,200	28,700	22,500	21,000	34,500	44,700	47,500	54,000	49,600	49,100	48,300
14	49,300	53,500	27,200	18,000	21,300	35,400	44,300	49,100	52,600	49,600	47,500	43,400
15	49,700	53,900	25,700	9,980	21,400	33,900	43,600	47,100	51,000	48,900	48,700	48,400
16	49,400	53,900	23,400	9,270	21,400	33,800	43,200	44,900	50,400	49,000	50,200	50,100
17	49,700	54,800	23,300	6,900	21,900	34,800	41,200	44,200	50,200	50,400	50,700	50,000
18	50,300	56,500	22,700	5,460	22,600	36,500	42,700	45,200	53,700	66,800	49,800	50,900
19	51,600	55,600	22,600	26,000	21,700	38,600	43,500	45,000	50,800	51,400	49,300	50,500
20	52,000	55,200	23,400	29,000	21,100	39,500	43,600	45,300	50,300	44,000	48,500	50,600
21	51,700	55,600	22,900	13,400	24,400	40,200	45,300	45,200	49,000	48,600	49,300	50,900
22	51,300	55,500	22,400	14,400	26,300	41,100	45,200	45,600	47,900	53,900	49,300	50,700
23	51,800	56,200	21,100	17,500	24,900	42,800	45,300	48,200	46,600	50,800	49,700	49,700
24	51,800	56,400	22,400	19,300	23,100	41,500	45,100	50,200	46,200	46,000	49,900	49,600
25	51,800	55,900	23,100	17,700	24,400	41,100	45,500	50,900	45,300	50,600	50,700	49,200
26	52,800	54,900	23,100	16,400	23,500	40,400	45,800	48,900	44,800	55,500	50,800	50,800
27	53,200	54,800	22,800	15,000	22,800	41,000	47,400	51,900	44,100	54,500	50,600	52,200
28	53,000	54,000	22,000	17,000	24,400	41,200	47,600	54,300	43,700	53,100	50,000	50,900
29	54,100	53,700	21,900	18,400	32,800	41,500	46,100	54,400	45,400	52,700	49,800	50,400
30	54,300	52,500	22,900	19,800	-------	41,700	45,400	52,500	44,400	52,200	50,200	50,300
31	54,100	-------	22,800	21,400	-------	41,200	-------	51,600	-------	52,100	50,600	-------
TOTAL	1,587.9M	1,645.2M	950,900	583,210	643,600	1,088.9M	1,342.8M	1,532.9M	1,490.5M	1,537.8M	1,563.2M	1,513.1M
MEAN	51,220	54,840	30,670	18,810	22,190	35,130	44,760	49,450	49,680	49,610	50,430	50,440
MAX	54,300	56,500	51,100	29,000	32,800	42,800	47,600	64,200	55,600	66,800	54,900	61,900
MIN	48,600	52,500	21,100	5,460	19,200	22,700	39,000	44,100	43,700	44,000	47,500	43,400
AC-FT	3,150M	3,263M	1,886M	1,157M	1,277M	2,160M	2,663M	3,041M	2,956M	3,050M	3,101M	3,001M

CAL YR 1971 TOTAL 15,560,300 MEAN 42,630 MAX 79,700 MIN 9,000 AC-FT 30,860,000
WTR YR 1972 TOTAL 15,480,010 MEAN 42,300 MAX 66,800 MIN 5,460 AC-FT 30,700,000

M Expressed in thousands.

06610500 INDIAN CREEK AT COUNCIL BLUFFS, IOWA

LOCATION.--Lat 41°17'32", long 95°49'59", in SE1/4 SW1/4 sec.18, T.75 N., R.43 W., Pottawattamie County, on left bank at downstream side of first bridge off State Highway 183, on Mud Hollow Road at north edge of Council Bluffs, 8.8 miles upstream from mouth.

DRAINAGE AREA.--7.99 sq mi.

PERIOD OF RECORD.--July 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,038.86 ft above mean sea level (City of Council Bluffs bench mark). Prior to Apr. 12, 1955, nonrecording gage at site 0.2 mile downstream at different datum.

AVERAGE DISCHARGE.--18 years, 1.50 cfs (2.55 inches per year, 1,090 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 314 cfs May 26 (gage height, 6.32 ft); minimum daily, 0.05 cfs Feb. 9-11.

Period of record: Maximum discharge, 2,980 cfs Sept. 7, 1965 (gage height, 15.36 ft); no flow at times most years.

REMARKS.--Records fair except those above 20 cfs and those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 18 to Nov. 4, June 17 to July 10, Sept. 16-30; stage-discharge relation affected by ice Nov. 28 to Dec. 1, Dec. 8-12, 16-21, Dec. 26 to Mar. 6).

Oct. 1 to May 26				May 27 to Sept. 30			
2.04	.07	2.6	3.9	1.97	.34	2.6	5.3
2.1	.19	2.9	8.6	2.1	.84	2.7	7.9
2.2	.49	3.1	14	2.3	1.9	2.9	16
2.3	1.0	3.5	33	2.4	2.7	3.0	22
2.4	1.7			2.5	3.7		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	3.0	.60	.45	.13	1.0	.49	4.0	1.5	.48	1.0	.60
2	.09	1.6	.57	.40	.12	.80	.45	2.7	1.4	.45	2.7	.76
3	.07	.85	.61	.35	.11	.70	.70	1.9	1.4	.45	1.4	.60
4	.09	.76	.65	.30	.10	.70	.53	1.6	1.3	.34	.92	.56
5	.07	.57	.61	.30	.09	.70	.61	5.5	1.2	.34	.80	.64
6	.09	.42	.65	.35	.08	1.5	.61	8.0	1.0	.72	.76	.52
7	.09	.39	.61	.40	.07	3.2	.70	4.9	1.0	.52	.56	.48
8	.13	.49	.55	.50	.06	.57	.53	3.4	1.6	.48	.48	.45
9	.13	.45	.50	.60	.05	.61	.61	2.6	1.7	.48	.42	.42
10	.13	.45	.45	.60	.05	.65	.57	2.4	1.2	12	.38	1.0
11	.15	.45	.45	.55	.05	.97	.57	2.3	.92	12	.45	15
12	.15	.45	.45	.50	.06	.75	.70	2.6	.92	2.7	.42	4.2
13	.17	.45	.49	.45	.10	.91	.65	3.7	1.2	1.6	.45	2.3
14	.17	.45	.91	.35	.50	1.1	.57	2.5	1.5	1.3	.42	1.2
15	.15	.45	.85	.30	1.0	1.3	.57	2.1	1.1	1.1	.45	.88
16	.17	.65	.47	.25	1.8	.91	1.3	1.8	1.6	1.0	.42	.68
17	.19	2.2	.45	.30	1.8	.91	.70	1.6	.84	1.2	.45	.72
18	.39	1.2	.45	.35	1.8	.85	.70	1.4	.84	1.1	.45	.64
19	.33	.75	.48	.40	1.7	.70	.85	1.2	.72	1.1	.45	.56
20	.19	.70	.52	.35	1.7	.80	1.2	1.2	.64	1.0	.45	.60
21	.19	.65	.55	.30	1.7	.97	2.5	1.2	.60	.88	.56	.64
22	.24	.65	.57	.25	1.5	.70	.91	1.2	.60	.76	.52	.56
23	.24	.75	.65	.30	1.7	.53	.53	1.8	.56	.76	.60	.45
24	.27	.70	.45	.35	1.5	.53	.45	1.4	.56	.76	.68	.52
25	.30	.65	.49	.30	1.3	.53	.45	1.2	.56	.76	1.4	.56
26	.30	.85	.40	.25	1.0	.57	.80	28	.52	17	.88	.56
27	2.1	.70	.35	.20	1.4	.75	5.1	19	.52	1.8	.72	.48
28	.75	.70	.35	.18	1.6	.57	3.8	3.8	.52	1.2	.68	.60
29	2.3	.65	.45	.16	1.4	.53	1.9	3.3	.48	.96	.56	.68
30	3.7	.65	.40	.15	------	.57	2.2	2.3	.45	.84	.56	.60
31	1.3	------	.45	.14	------	.53	------	1.8	------	.80	.60	------
TOTAL	14.73	23.68	16.38	10.63	24.47	26.41	32.25	122.4	28.95	66.88	21.59	38.46
MEAN	.48	.79	.53	.34	.84	.85	1.08	3.95	.97	2.16	.70	1.28
MAX	3.7	3.0	.91	.60	1.8	3.2	5.1	28	1.7	17	2.7	15
MIN	.07	.39	.35	.14	.05	.53	.45	1.2	.45	.34	.38	.42
CFSM	.06	.10	.07	.04	.11	.11	.14	.49	.12	.27	.09	.16
IN.	.07	.11	.08	.05	.11	.12	.15	.57	.13	.31	.10	.18
AC-FT	29	47	32	21	49	52	64	243	57	133	43	76

CAL YR 1971 TOTAL 421.02 MEAN 1.15 MAX 62 MIN 0 CFSM .14 IN 1.96 AC-FT 835
WTR YR 1972 TOTAL 426.93 MEAN 1.17 MAX 28 MIN .05 CFSM .15 IN 1.99 AC-FT 847

PEAK DISCHARGE (BASE, 700 CFS).--No peak above base.

06610520 MOSQUITO CREEK NEAR EARLING, IOWA

LOCATION.--Lat 41°45'10", long 95°27'50", in N1/2 SE1/4 sec.11, T.80 N., R.40 W., Shelby County, on right bank at stream-stabilization structure 1,300 ft downstream from bridge on State Highway 191, 0.5 mile downstream from small left-bank tributary and 2.3 miles southwest of Earling.

DRAINAGE AREA.--32.0 sq mi.

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Duplex water-stage recorder. Datum of gage is 1,222.56 ft above mean sea level. Gage heights obtained of headwater (base gage) and tailwater (supplementary gage) elevations at stream-stabilization structure.

AVERAGE DISCHARGE.--7 years, 12.2 cfs (5.18 inches per year, 8,840 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,000 cfs Sept. 11 (gage height, 31.18 ft, from floodmarks); no flow Jan. 5, 6, 14-17.

Period of record: Maximum discharge, 12,000 cfs Sept. 11, 1972 (gage height, 31.18 ft, from floodmarks); no flow for several days in 1970-72.

REMARKS.--Records fair except those for winter period, which are poor. The stabilization structure is a dam approximately 16 ft high constructed of sheet piling and derrick stone. The crest of the cut-off piling is rectangular in shape at low stages and trapezoidal at high stages. Daily discharges computed from headwater gage readings.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	3.8	.66	.60	.25	11	1.2	3.6	4.9	.76	2.2	1.9
2	.76	4.2	.76	.40	.25	.76	1.0	5.0	4.9	1.4	10	2.6
3	.76	1.2	.88	.30	.25	.66	1.4	4.5	4.6	1.0	6.0	2.1
4	.18	1.3	1.2	.27	.25	.76	2.1	3.8	5.1	.76	4.0	1.9
5	.18	1.2	1.3	0	.25	.76	2.6	3.8	4.4	1.2	2.8	1.9
6	.09	.66	1.4	0	.25	28	2.4	23	3.6	1.8	2.4	1.0
7	.09	.46	1.8	.18	.25	4.9	2.1	12	3.6	2.1	3.0	1.3
8	.09	.66	1.4	1.0	.22	.88	1.3	10	3.2	2.6	6.7	1.4
9	.18	1.0	1.0	5.0	.20	1.6	1.6	8.5	2.8	.76	4.0	1.3
10	.36	1.2	1.8	8.0	.18	1.3	1.8	7.2	2.4	.76	3.8	206
11	.36	1.6	1.3	4.0	.20	2.1	1.4	7.0	2.4	2.6	4.0	4,250
12	.27	2.2	.56	1.5	.20	1.9	1.3	7.2	2.2	5.1	3.8	3,260
13	.46	2.1	.09	.25	.25	2.8	2.1	7.7	2.2	3.0	2.4	219
14	.56	.46	.09	0	.30	1.9	1.3	6.2	6.0	3.0	1.9	139
15	.56	1.2	.09	0	.30	2.1	1.6	5.8	2.6	3.3	1.3	106
16	.46	1.6	.09	0	1.0	1.6	3.4	5.3	2.1	2.8	.27	83
17	.46	5.1	.09	0	6.0	1.3	1.9	4.6	3.2	3.0	.36	62
18	1.0	3.6	.09	2.5	7.6	1.4	1.6	4.6	2.4	4.5	.46	49
19	1.9	.88	.18	8.0	4.0	1.0	2.1	3.4	1.9	3.3	.27	37
20	.88	.66	.27	3.0	270	1.2	1.1	3.4	2.2	2.0	.18	29
21	.46	.36	.46	.80	80	1.9	1.7	3.4	1.4	1.8	.36	25
22	.36	.27	.46	.60	4.0	1.2	2.5	3.0	1.3	1.6	.18	22
23	1.0	.36	1.3	.60	235	.66	1.6	5.6	1.6	1.4	.56	22
24	.88	.76	1.8	.50	33	.76	1.5	5.1	1.8	1.8	.66	22
25	.36	1.0	1.9	.45	4.0	.88	1.4	4.9	1.9	2.7	2.2	20
26	.76	1.2	1.3	.40	1.0	1.0	1.3	6.2	1.8	9.0	1.9	19
27	7.7	1.3	.56	.35	230	2.1	2.5	12	1.4	6.0	2.1	20
28	4.4	1.4	.18	.30	360	1.3	4.0	6.7	2.2	3.5	1.9	19
29	8.0	1.6	.25	.30	23	.88	6.0	6.0	1.0	3.0	1.3	23
30	16	.76	.40	.25	------	.88	3.0	5.3	.76	2.6	1.4	20
31	6.2	------	.50	.25	------	1.8	------	5.1	------	2.2	2.2	------
TOTAL	56.28	44.09	24.16	39.80	1,262.20	81.28	60.8	199.9	81.86	81.34	74.60	8,667.4
MEAN	1.82	1.47	.78	1.28	43.5	2.62	2.03	6.45	2.73	2.62	2.41	289
MAX	16	5.1	1.9	8.0	360	28	6.0	23	6.0	9.0	10	4,250
MIN	.09	.27	.09	0	.18	.66	1.0	3.0	.76	.76	.18	1.0
CFSM	.06	.05	.02	.04	1.36	.08	.06	.20	.09	.08	.08	9.03
IN.	.07	.05	.03	.05	1.47	.09	.07	.23	.10	.09	.09	10.08
AC-FT	112	87	48	79	2,500	161	121	397	162	161	148	17,190

CAL YR 1971 TOTAL 4,131.69 MEAN 11.3 MAX 900 MIN 0 CFSM .35 IN 4.80 AC-FT 8,200
WTR YR 1972 TOTAL 10,673.71 MEAN 29.2 MAX 4,250 MIN 0 CFSM .91 IN 12.41 AC-FT 21,170

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
2-20	1830	21.55	1,440	2-28	1500	21.80	1,640
2-23	1800	21.66	1,530	9-11	0430	31.18	12,000

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBR.
(International Hydrological Decade River Station)

LOCATION.--Lat 40°40'55", long 95°50'48", in NW1/4 NE1/4 sec.9, T.8 N., R.14 E., Otto County, on right bank 0.7 mile upstream from Waubonsie Highway Bridge at Nebraska City, and at mile 562.6.

DRAINAGE AREA.--414,400 sq mi, approximately.

PERIOD OF RECORD.--August 1929 to current year. Gage-height records collected in this vicinity from August 1878 to December 1899 are contained in reports of Missouri River Commission.

GAGE.--Water-stage recorder. Datum of gage is 905.36 ft above mean sea level, datum of 1929, supplementary adjustment of 1954. See WSP 1918 or 1919 for history of changes prior to Apr. 1, 1963.

AVERAGE DISCHARGE.--43 years, 34,490 cfs (24,990,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 86,500 cfs Sept. 13 (gage height, 15.82 ft); minimum daily, 10,000 cfs Jan. 16, 17; minimum gage height, 2.40 ft Jan. 16.

Period of record: Maximum discharge, 414,000 cfs Apr. 19, 1952; maximum gage height, 27.66 ft Apr. 18, 1952; minimum discharge, 1,600 cfs Dec. 31, 1946 (discharge measurement); minimum gage height observed, -0.28 ft Dec. 24, 1960, result of freezeup.

REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by upstream main-stem reservoirs. Records of periodic chemical analyses for the current year are published in Part 2, Water Resources Data for Nebraska.

REVISIONS.--WSP 761: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50,300	60,600	56,600	25,900	24,500	57,000	46,100	59,000	57,600	45,400	56,600	52,000
2	52,000	60,600	55,900	25,600	24,500	51,700	47,800	80,800	55,600	45,800	58,700	52,400
3	53,100	60,600	54,800	26,100	24,000	37,100	50,300	71,000	54,200	47,200	59,800	51,700
4	53,400	61,000	53,400	24,500	22,500	33,400	52,800	62,200	54,500	46,100	58,400	49,600
5	53,800	58,700	51,700	22,000	22,000	31,800	52,400	62,200	55,600	46,800	57,300	50,000
6	52,000	59,000	49,600	22,700	23,000	29,700	52,000	78,600	57,000	45,400	56,600	50,300
7	52,000	61,000	47,500	23,400	23,500	34,400	51,700	77,600	57,300	47,500	56,600	51,000
8	53,800	59,400	45,800	24,300	24,000	46,800	50,600	68,200	57,000	48,600	57,300	51,700
9	53,800	58,400	44,200	25,200	24,000	41,200	51,400	58,000	60,600	48,900	57,600	51,000
10	54,200	56,600	41,800	25,200	24,000	38,200	51,700	55,600	60,600	49,200	55,900	50,300
11	52,400	58,700	38,800	25,400	24,000	36,600	51,000	56,600	57,300	51,400	54,500	63,400
12	51,000	59,000	36,800	25,900	23,500	36,800	50,300	56,200	57,600	55,200	54,200	74,600
13	51,400	59,000	34,100	25,000	24,000	40,900	50,000	58,000	56,600	51,000	53,100	75,000
14	52,400	56,600	31,400	22,000	25,400	43,900	48,200	64,200	59,000	51,700	52,000	55,600
15	52,800	56,200	29,700	12,000	27,400	42,100	47,500	66,200	54,800	51,700	51,400	56,600
16	53,100	56,600	27,200	10,000	27,700	40,900	48,200	61,400	52,400	50,300	52,800	57,300
17	52,400	58,000	27,200	10,000	28,400	41,500	46,800	58,400	51,700	50,600	51,700	55,900
18	52,400	60,600	27,200	12,000	29,000	43,300	46,800	57,300	55,200	68,200	51,700	55,200
19	52,000	61,400	27,400	22,700	28,800	44,800	49,200	57,000	54,800	66,200	51,000	54,500
20	53,800	61,400	27,400	41,500	27,700	46,800	49,600	56,600	51,700	50,000	51,000	54,500
21	54,500	61,000	27,400	21,600	30,600	46,800	52,800	55,600	51,400	52,000	50,600	54,500
22	53,800	61,800	27,200	19,000	34,800	48,600	52,400	53,400	51,700	56,200	51,700	54,200
23	54,200	61,400	26,600	21,200	35,800	50,300	51,000	55,900	51,000	64,600	52,400	54,200
24	54,800	61,800	26,800	22,000	33,400	48,600	48,900	57,000	50,000	53,800	52,400	53,800
25	53,400	61,400	29,000	20,000	33,400	47,800	48,600	62,200	49,200	55,600	55,200	53,800
26	54,500	61,000	28,400	19,000	33,400	48,200	48,600	62,200	48,900	60,600	54,200	54,500
27	57,300	61,400	28,400	19,000	32,800	47,500	51,000	61,400	48,900	61,400	53,800	57,300
28	58,000	60,600	27,200	20,600	33,400	48,600	52,000	62,200	46,800	61,400	52,800	56,200
29	60,200	59,000	26,100	22,000	42,100	48,200	51,400	64,200	48,600	61,000	52,800	55,900
30	61,800	58,400	27,000	22,500	------	48,200	52,800	61,400	48,200	59,800	51,700	55,600
31	61,400	------	26,800	23,600	------	48,200	------	59,400	------	57,300	52,000	------
TOTAL	1,676.0M	1,791.2M	1,109.4M	681,900	811,600	1,349.9M	1,503.9M	1,920.0M	1,615.8M	1,660.9M	1,677.8M	1,662.6M
MEAN	54,060	59,710	35,790	22,000	27,990	43,550	50,130	61,940	53,860	53,580	54,120	55,420
MAX	61,800	61,800	56,600	41,500	42,100	57,000	52,800	80,800	60,600	68,200	59,800	75,000
MIN	50,300	56,200	26,100	10,000	22,000	29,700	46,100	53,400	46,800	45,400	50,600	49,600
AC-FT	3,324M	3,553M	2,200M	1,353M	1,610M	2,678M	2,983M	3,808M	3,205M	3,294M	3,328M	3,298M

CAL YR 1971 TOTAL 18,292,400 MEAN 50,120 MAX 112,000 MIN 9,500 AC-FT 36,280,000

WTR YR 1972 TOTAL 17,461,000 MEAN 47,710 MAX 80,800 MIN 10,000 AC-FT 34,630,000

M Expressed in thousands.

06807410 WEST NISHNABOTNA RIVER AT HANCOCK, IOWA

LOCATION.--Lat 41°23'24", long 95°22'17", in NE1/4 sec.18, T.76 N., R.39 W., Pottawattamie County, on downstream end of right pier of bridge on county highway G30, 0.6 mile west of Hancock school, and 3.0 miles downstream from Jim Creek.

DRAINAGE AREA.--609 sq mi.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,085.83 ft (revised) above mean sea level

AVERAGE DISCHARGE.--13 years, 216 cfs (4.82 inches per year, 156,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 26,400 cfs Sept. 13 (gage height, 22.12 ft); minimum daily, 11 cfs Oct. 9-13.

Period of record: Maximum discharge, 26,400 cfs Sept. 13, 1972 (gage height, 22.12 ft); minimum daily, 2.2 cfs Feb. 8, 9, 1971.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	221	28	25	15	780	50	266	205	116	124	68
2	14	240	33	25	15	500	50	310	195	106	926	74
3	13	132	34	23	15	450	50	257	179	99	438	70
4	13	86	33	21	15	400	52	221	177	93	216	67
5	12	64	33	20	15	350	52	195	210	92	166	64
6	12	53	33	20	15	280	53	342	192	95	161	64
7	12	48	33	20	15	319	50	646	164	110	221	62
8	12	40	32	21	15	200	46	459	148	106	251	59
9	11	45	31	23	15	114	45	377	164	92	132	56
10	11	44	29	23	15	110	46	326	136	90	116	504
11	11	41	28	23	15	112	45	294	128	101	108	14,200
12	11	39	27	22	15	118	44	278	124	104	101	23,300
13	11	37	27	20	15	106	44	329	120	118	95	17,400
14	13	34	27	19	16	104	43	374	161	120	88	2,910
15	12	31	27	18	16	101	43	290	197	145	86	1,880
16	12	33	26	18	25	88	62	257	156	102	83	1,570
17	12	59	26	19	80	83	64	232	139	116	79	1,240
18	15	93	27	20	180	81	50	216	380	205	74	1,020
19	21	70	27	19	250	74	43	195	248	145	70	895
20	18	52	26	18	200	68	45	177	179	110	67	805
21	18	41	25	17	160	67	86	166	151	99	65	760
22	17	37	26	17	140	68	110	156	139	90	65	679
23	16	36	28	17	120	60	84	164	130	83	67	646
24	16	37	30	16	150	55	64	197	126	101	68	626
25	17	37	30	15	220	53	55	174	128	116	86	590
26	15	37	29	14	200	53	52	355	124	726	92	614
27	28	38	27	14	300	56	74	743	120	551	83	578
28	50	39	25	14	1,200	59	294	374	274	210	72	529
29	86	36	25	14	2,060	59	332	294	268	151	65	518
30	237	32	25	15	------	52	218	248	132	132	62	526
31	335	------	25	15	------	52	------	221	------	120	64	------
TOTAL	1,095	1,832	882	585	5,512	5,072	2,346	9,133	5,194	4,644	4,391	72,374
MEAN	35.3	61.1	28.5	18.9	190	164	78.2	295	173	150	142	2,412
MAX	335	240	34	25	2,060	780	332	743	380	726	926	23,300
MIN	11	31	25	14	15	52	43	156	120	83	62	56
CFSM	.06	.10	.05	.03	.31	.27	.13	.48	.28	.25	.23	3.96
IN.	.07	.11	.05	.04	.34	.31	.14	.56	.32	.28	.27	4.42
AC-FT	2,170	3,630	1,750	1,160	10,930	10,060	4,650	18,120	10,300	9,210	8,710	143,600

CAL YR 1971 TOTAL 63,859.6 MEAN 175 MAX 13,700 MIN 2.2 CFSM .29 IN 3.90 AC-FT 126,700
WTR YR 1972 TOTAL 113,060.0 MEAN 309 MAX 23,300 MIN 11 CFSM .51 IN 6.91 AC-FT 224,300

PEAK DISCHARGE (BASE, 4,000 CFS).--Feb. 29 (0200) 4,210 cfs (8.81 ft); Sept. 13 (0100) 26,400 cfs (22.12 ft).

06808500 WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA

LOCATION.--Lat 40°52'23", long 95°34'48", in NE1/4 NE1/4 sec.17, T.70 N., R.41 W., Fremont County, on right bank on downstream side of bridge on State Highway 184, 0.3 mile downstream from Deer Creek, 0.5 mile west of Randolph, and 16.2 miles upstream from confluence with East Nishnabotna River.

DRAINAGE AREA.--1,326 sq mi.

PERIOD OF RECORD.--June 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 932.99 ft above mean sea level, unadjusted. Prior to Aug. 26, 1955, nonrecording gage and June 30, 1949, to Aug. 25, 1955, supplementary water-stage recorder, operating above gage height 8.4 ft at same site and datum.

AVERAGE DISCHARGE.--24 years, 481 cfs (4.93 inches per year, 348,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 18,500 cfs Sept. 14 (gage height, 21.71 ft); minimum daily, 46 cfs Feb. 10, 11.

Period of record: Maximum discharge, 35,500 cfs June 21, 1967 (gage height, 22.60 ft); maximum gage height, 24.8 ft Mar. 5, 1949, from graph based on gage readings (backwater from ice); minimum daily discharge, 10 cfs Dec. 17-21, 1955.

Flood in June 1947 reached a stage of about 24 ft (discharge not determined), from information by local residents.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used June 14-23, Sept. 11-30; stage-discharge relation affected by ice Dec. 17-24, Dec. 26 to Feb. 25).

6.69	50	10.0	1,560
7.0	92	12.0	3,590
7.4	177	14.0	6,790
8.0	369	17.0	13,900
9.0	850	19.0	20,000

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	447	118	86	62	1,110	122	398	469	340	232	146
2	55	537	114	88	62	600	120	423	440	303	233	160
3	55	315	120	90	60	232	118	433	421	283	748	157
4	53	210	124	80	58	211	114	387	407	266	473	150
5	51	160	124	70	56	215	114	643	380	253	307	143
6	50	130	124	70	54	248	113	3,080	411	263	263	135
7	50	113	124	75	52	242	111	1,400	390	452	241	130
8	54	113	124	80	50	312	111	1,130	807	333	268	124
9	51	114	124	85	48	262	109	817	375	287	327	119
10	50	113	126	90	46	199	105	717	623	255	260	136
11	51	109	127	95	46	195	104	637	345	410	223	4,140
12	54	105	128	100	47	197	102	626	331	365	225	14,500
13	53	102	110	95	48	199	102	764	319	297	214	17,300
14	53	98	132	85	49	190	102	627	505	311	206	17,800
15	54	94	142	70	50	188	100	634	445	277	201	5,240
16	54	97	133	70	52	197	105	549	405	290	193	2,060
17	53	154	95	75	70	182	114	508	372	252	192	1,620
18	60	218	100	85	250	176	116	468	351	325	184	1,310
19	71	177	105	84	240	170	124	438	500	318	177	1,130
20	69	150	108	82	230	161	126	404	755	293	170	1,050
21	69	126	105	80	220	159	313	383	444	244	175	977
22	70	116	110	78	230	151	243	369	372	215	182	916
23	68	113	120	78	350	143	193	472	388	203	182	856
24	67	113	125	76	300	137	165	463	377	235	182	828
25	65	113	129	74	600	135	142	425	372	212	186	817
26	65	116	120	72	468	132	136	391	338	1,770	191	862
27	78	120	85	70	332	132	220	2,140	308	1,490	178	850
28	89	122	80	68	811	130	406	1,040	339	647	165	784
29	126	129	80	66	2,710	128	469	767	393	354	152	751
30	374	121	82	64	------	124	451	651	445	281	143	751
31	416	------	84	62	------	124	------	509	------	246	147	------
TOTAL	2,581	4,745	3,522	2,443	7,651	6,981	4,970	22,693	12,827	12,070	7,220	75,942
MEAN	83.3	158	114	78.8	264	225	166	732	428	389	233	2,531
MAX	416	537	142	100	2,710	1,110	469	3,080	807	1,770	748	17,800
MIN	50	94	80	62	46	124	100	369	308	203	143	119
CFSM	.06	.12	.09	.06	.20	.17	.13	.55	.32	.29	.18	1.91
IN.	.07	.13	.10	.07	.21	.20	.14	.64	.36	.34	.20	2.13
AC-FT	5,120	9,410	6,990	4,850	15,180	13,850	9,860	45,010	25,440	23,940	14,320	150,600

CAL YR 1971 TOTAL 141,794 MEAN 388 MAX 18,200 MIN 45 CFSM .29 IN 3.98 AC-FT 281,200
WTR YR 1972 TOTAL 163,645 MEAN 447 MAX 17,800 MIN 46 CFSM .34 IN 4.59 AC-FT 324,600

PEAK DISCHARGE (BASE, 6,500 CFS).--May 6 (0215) 6,580 cfs (13.87 ft); Sept. 14 (1830) 18,500 cfs (21.71 ft).

06809000 DAVIDS CREEK NEAR HAMLIN, IOWA

LOCATION.--Lat 41°40'25", long 94°48'20", in NE1/4 NE1/4 sec.9, T.79, R.34 W., Audubon County, on left bank 20 ft downstream from bridge on State Highway 64, 5.2 miles east of Hamlin, and 8 miles upstream from mouth.
DRAINAGE AREA.--26.0 sq mi.
PERIOD OF RECORD.--June 1952 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,266.54 ft above mean sea level.
AVERAGE DISCHARGE.--20 years, 9.82 cfs (5.13 inches per year, 7,110 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 584 cfs Sept. 11 (gage height, 6.04 ft); minimum daily, 0.07 cfs Feb. 3-11.

Period of record: Maximum discharge, 22,700 cfs July 2, 1958 (gage height, 19.35 ft), from rating curve extended above 500 cfs on basis of slope-area measurement of peak flow; no flow on many days in 1952-56, 1972.
REMARKS.--Records poor prior to Apr. 27 and fair thereafter. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1440: Drainage area. WSP 1919: 1960. WRD Iowa 1966: 1961-62, 1964-65.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Feb. 29, Mar. 10, Sept. 17-30; stage-discharge relation affected by ice Nov. 6-9, Nov. 29 to Feb. 28).

Oct. 1 to Feb. 28				Feb. 29 to Sept. 30			
1.08	.18	1.2	1.1	.92	1.3	2.0	58
1.11	.29	1.3	2.6	1.0	2.3	3.0	151
1.15	.57	1.6	9.0	1.1	4.6	4.0	274
				1.5	24		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	8.8	2.7	1.2	.08	4.0	3.4	32	10	4.0	12	1.8
2	.19	7.2	2.5	1.1	.08	2.5	3.0	25	9.4	3.7	84	2.0
3	.19	4.8	2.3	.90	.07	1.5	4.0	18	9.0	3.9	10	1.8
4	.18	2.5	2.1	.80	.07	1.5	5.0	17	10	3.9	7.0	1.8
5	.18	1.5	2.0	.80	.07	1.8	6.0	16	9.4	3.9	4.9	1.8
6	.23	.90	1.9	.86	.07	2.5	5.5	69	8.5	4.7	6.9	1.6
7	.23	.70	1.8	1.0	.07	2.2	4.5	70	7.9	4.4	4.0	1.5
8	.24	.75	1.6	2.5	.07	2.0	4.0	41	7.7	3.7	3.5	1.4
9	.25	.80	1.5	3.5	.07	1.9	4.0	31	6.9	3.4	3.2	1.3
10	.25	.80	1.4	4.5	.07	1.9	4.0	26	6.3	3.2	3.0	24
11	.25	.80	1.3	4.0	.07	2.1	4.0	23	6.3	4.8	2.8	262
12	.25	.78	1.2	2.5	.09	2.3	4.0	21	6.6	5.3	2.6	223
13	.25	.76	1.2	1.5	.15	2.2	4.0	35	6.6	3.9	2.5	136
14	.25	.74	1.2	1.0	.20	2.1	4.0	23	9.8	4.4	2.3	89
15	.25	.72	1.2	.50	.20	3.0	4.0	19	7.1	3.2	2.2	71
16	.22	.80	1.1	.50	.25	2.6	7.0	16	6.5	2.7	2.2	60
17	.20	6.0	1.0	.50	.30	2.2	5.5	15	7.0	3.0	2.0	47
18	.30	3.5	1.0	.50	.35	1.8	4.5	13	6.6	3.1	2.0	38
19	.35	3.0	1.0	.45	.40	1.7	5.0	12	6.2	3.0	2.0	33
20	.35	2.8	1.0	.35	.50	2.0	6.0	11	5.7	2.6	1.8	29
21	.35	2.6	1.0	.30	1.0	2.5	15	11	5.5	2.2	2.2	24
22	.35	2.5	1.0	.25	1.5	2.3	10	11	5.2	2.0	1.9	23
23	.32	2.6	1.2	.20	10	1.9	9.0	13	5.2	2.3	2.0	20
24	.26	2.7	1.4	.15	28	2.1	9.0	13	5.2	2.5	1.9	19
25	.24	2.8	1.5	.10	15	2.3	8.5	11	5.1	2.2	2.3	18
26	.25	2.8	1.5	.10	12	2.5	8.0	11	5.0	13	2.2	28
27	.25	2.8	1.4	.09	50	5.0	10	13	4.6	3.6	2.0	14
28	.25	3.0	1.2	.09	90	3.5	67	13	5.0	3.0	1.8	14
29	.60	2.9	1.2	.08	9.1	2.5	28	13	4.5	2.6	1.8	15
30	6.1	2.8	1.2	.08	------	2.5	25	11	3.8	2.1	1.5	13
31	6.1	------	1.2	.08	------	5.0	------	11	------	2.0	1.8	------
TOTAL	19.88	76.15	44.8	30.48	219.83	75.9	280.9	664	202.6	112.3	182.3	1,215.0
MEAN	.64	2.54	1.45	.98	7.58	2.45	9.36	21.4	6.75	3.62	5.88	40.5
MAX	6.1	8.8	2.7	4.5	90	5.0	67	70	10	13	84	262
MIN	.18	.70	1.0	.08	.07	1.5	3.0	11	3.8	2.0	1.5	1.3
CFSM	.02	.10	.06	.04	.29	.09	.36	.82	.26	.14	.23	1.56
IN.	.03	.11	.06	.04	.31	.11	.40	.95	.29	.16	.26	1.74
AC-FT	39	151	89	60	436	151	557	1,320	402	223	362	2,410

CAL YR 1971 TOTAL 3,178.69 MEAN 8.71 MAX 500 MIN 0 CFSM .34 IN 4.55 AC-FT 6,300
WTR YR 1972 TOTAL 3,124.14 MEAN 8.54 MAX 262 MIN .07 CFSM .33 IN 4.47 AC-FT 6,200

PEAK DISCHARGE (BASE, 400 CFS).--Aug. 1 (2345) 520 cfs (5.64 ft); Sept. 11 (0245) 584 cfs (6.04 ft).

NOTE.--No gage-height record Oct. 1-4, 6-29, Nov. 4-30, Dec. 2 to Jan. 8, Jan. 14-17, Feb. 7-17, 19, 20, Mar. 1-9, 11-30, Apr. 1-27.

06809210 EAST NISHNABOTNA RIVER NEAR ATLANTIC, IOWA

LOCATION.--Lat 41°20'47", long 95°04'31", in NW1/4 NW1/4 sec.35, T.76 N., R.67 W., Cass County, on left bank at downstream side of bridge on county highway, 1.9 miles upstream from Turkey Creek, and 5.4 miles southwest of junction of U.S. Highway 6 and State Highway 83 in Atlantic.

DRAINAGE AREA.--436 sq mi. Area at site used prior to Oct. 1, 1970, 432 sq mi.

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,105.83 ft above mean sea level. Prior to Oct. 1, 1970, at site 2.0 miles upstream at datum 5.00 ft higher.

AVERAGE DISCHARGE.--12 years, 176 cfs (5.48 inches per year, 127,500 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 26,700 cfs Sept. 12 (gage height, 22.81 ft); minimum daily, 10 cfs Feb 10, 11.

Period of record: Maximum discharge, 26,700 cfs Sept. 12, 1972 (gage height, 22.81 ft); minimum daily, 7.0 cfs Dec. 17-23, 1963, Jan. 5-11, 1971.

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	121	36	30	13	354	29	401	253	68	105	70
2	13	188	36	29	13	60	27	337	239	64	1,390	74
3	13	94	35	28	13	120	35	277	231	87	387	64
4	12	60	34	28	13	90	45	259	225	54	215	62
5	12	49	35	28	12	90	52	236	253	55	172	60
6	16	42	36	28	12	87	41	253	220	48	871	60
7	15	30	37	28	12	147	38	1,180	202	64	333	58
8	16	35	41	30	11	75	35	621	200	60	231	57
9	17	40	30	40	11	69	32	460	188	56	180	55
10	16	40	38	65	10	65	34	376	170	52	163	137
11	17	37	36	55	10	74	35	314	156	64	145	14,900
12	17	36	35	50	11	77	34	320	165	115	135	23,000
13	17	34	34	45	12	75	35	452	165	321	133	7,340
14	18	31	33	40	13	69	35	394	256	218	127	1,500
15	17	30	33	35	14	98	34	320	259	242	121	1,130
16	14	36	33	30	14	82	58	301	188	262	115	980
17	13	86	34	28	16	65	64	265	230	317	111	815
18	22	165	35	28	20	62	42	225	558	236	107	532
19	26	89	36	27	20	58	45	239	158	182	102	441
20	24	65	37	26	20	55	55	242	131	163	100	412
21	26	52	37	24	80	58	137	205	105	156	109	387
22	25	45	38	24	50	60	149	195	103	137	100	362
23	22	47	40	22	45	54	98	195	98	133	91	351
24	20	48	35	19	100	51	70	286	89	220	91	351
25	16	47	33	17	80	49	65	223	79	149	100	354
26	15	47	32	15	50	40	58	200	77	559	103	601
27	19	45	31	14	40	40	82	330	62	354	90	419
28	16	47	30	14	1,000	40	737	304	87	147	79	351
29	25	41	30	14	812	38	383	268	98	131	74	351
30	75	40	30	14	------	38	259	234	72	117	75	383
31	105	------	30	14	------	42	------	212	------	107	74	------
TOTAL	694	1,767	1,070	889	2,527	2,382	2,843	10,124	5,317	4,938	6,229	55,657
MEAN	22.4	58.9	34.5	28.7	87.1	76.8	94.8	327	177	159	201	1,855
MAX	105	188	41	65	1,000	354	737	1,180	558	559	1,390	23,000
MIN	12	30	30	14	10	38	27	195	62	48	74	55
CFSM	.05	.14	.08	.07	.20	.18	.22	.75	.41	.36	.46	4.25
IN.	.06	.15	.09	.08	.22	.20	.24	.86	.45	.42	.53	4.75
AC-FT	1,380	3,500	2,120	1,760	5,010	4,720	5,640	20,080	10,550	9,790	12,360	110,400

CAL YR 1971 TOTAL 53,358.0 MEAN 146 MAX 9,510 MIN 7.0 CFSM .33 IN 4.55 AC-FT 105,800
WTR YR 1972 TOTAL 94,437.0 MEAN 258 MAX 23,000 MIN 10 CFSM .59 IN 8.06 AC-FT 187,300

PEAK DISCHARGE (BASE, 3,000 CFS).--Aug. 2 (1200) 3,240 cfs (9.42 ft); Sept. 12 (1700) 26,700 cfs (22.81 ft).

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA

LOCATION.--Lat 41°00'41", long 95°14'07", in NW1/4 SE1/4 sec.29, T.72 N., R.38 W., Montgomery County, on left bank on downstream side of Coolbaugh Street bridge in Red Oak, and 0.2 mile upstream from Red Oak Creek.

DRAINAGE AREA.--894 sq mi.

PERIOD OF RECORD.--May 1918 to July 1925, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 1,005.45 ft above mean sea level, unadjusted. Prior to July 5, 1925, nonrecording gage at present site at datum 4.60 ft higher. May 29, 1936, to Nov. 13, 1952, nonrecording gage with supplementary water-stage recorder in operation above 3.2 ft gage height July 30, 1939 to Nov. 13, 1952, and Nov. 14, 1952 to June 13, 1966, water-stage recorder, all at site 0.5 mile upstream at datum 5.00 ft higher. June 14, 1966 to Sept. 30, 1969, at present site at datum 5.00 ft higher.

AVERAGE DISCHARGE.--42 years (1918-24, 1936-72), 344 cfs (5.23 inches per year, 249,200 acre-ft per year); median of yearly mean discharges, 304 cfs (4.6 inches per year, 220,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 38,000 cfs Sept. 13 (gage height, 27.43 ft); minimum daily, 23 cfs Oct. 17.

Period of record: Maximum discharge, 38,000 cfs Sept. 13, 1972 (gage height, 27.43 ft); maximum gage height, 28.23 ft June 13, 1947, present datum; minimum daily discharge, 6 cfs Aug. 18, 1936.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1240: 1921, 1922-23 (M), 1924, 1942 (M), 1944 (M), 1946. WSP 1440: Drainage area. WSP 1710: 1957.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	252	73	65	36	697	86	482	413	172	150	121
2	27	318	69	70	37	238	86	712	375	165	617	124
3	28	298	75	70	36	165	82	523	327	173	1,380	127
4	26	142	73	50	35	170	82	445	306	138	401	123
5	28	95	75	40	35	180	81	486	304	128	257	117
6	26	74	77	45	35	191	79	1,390	350	133	220	114
7	24	62	80	50	34	188	77	2,320	299	149	1,370	108
8	29	51	84	52	33	270	72	1,600	270	151	452	104
9	28	55	86	54	32	144	68	1,050	245	126	346	101
10	29	54	80	56	31	135	63	840	215	116	252	108
11	26	53	76	65	31	135	58	690	207	145	231	8,590
12	25	49	68	80	31	144	58	616	188	204	241	17,900
13	26	44	42	70	32	152	56	794	194	222	209	29,800
14	26	41	60	50	34	154	55	1,010	337	505	199	17,200
15	25	35	80	30	38	154	53	695	658	398	216	2,850
16	24	35	70	35	38	205	63	586	399	286	172	1,940
17	23	107	55	40	40	160	100	526	350	224	162	1,540
18	34	269	43	45	45	141	102	475	645	393	151	1,250
19	38	224	86	50	50	129	79	427	465	314	148	1,080
20	46	124	82	53	55	120	74	386	528	216	136	948
21	45	95	69	50	150	116	160	356	259	184	144	850
22	45	78	69	48	350	119	273	341	214	152	151	766
23	41	69	80	46	222	112	201	402	183	135	151	712
24	37	70	85	44	421	103	146	546	165	126	149	694
25	34	71	89	40	619	98	125	540	150	213	163	692
26	33	71	85	38	332	96	116	424	148	827	174	779
27	44	73	24	37	216	93	135	1,390	142	1,210	170	1,060
28	51	75	35	36	1,050	94	633	800	178	375	143	777
29	75	75	50	35	1,870	94	1,120	650	221	224	130	793
30	137	71	55	35	------	90	543	564	212	190	109	852
31	250	------	60	35	------	87	------	450	------	162	105	------
TOTAL	1,357	3,130	2,135	1,514	5,968	4,974	4,926	22,516	8,947	8,156	8,899	92,220
MEAN	43.8	104	68.9	48.8	206	160	164	726	298	263	287	3,074
MAX	250	318	89	80	1,870	697	1,120	2,320	658	1,210	1,380	29,800
MIN	23	35	24	30	31	87	53	341	142	116	105	101
CFSM	.05	.12	.08	.05	.23	.18	.18	.81	.33	.29	.32	3.44
IN.	.06	.13	.09	.06	.25	.21	.20	.94	.37	.34	.37	3.84
AC-FT	2,690	6,210	4,230	3,000	11,840	9,870	9,770	44,660	17,750	16,180	17,650	182,900

CAL YR 1971 TOTAL 97,174 MEAN 266 MAX 15,800 MIN 12 CFSM .30 IN 4.04 AC-FT 192,700
WTR YR 1972 TOTAL 164,742 MEAN 450 MAX 29,800 MIN 23 CFSM .50 IN 6.86 AC-FT 326,800

PEAK DISCHARGE (BASE, 4,500 CFS).--Sept. 13 (2030) 38,000 cfs (27.43 ft).

06810000 NISHNABOTNA RIVER ABOVE HAMBURG, IOWA

LOCATION.--Lat 40°37'57", long 95°37'32", in SW1/4 SE1/4 sec.11, T.67 N., R.42 W., Fremont County, on left bank 1.6 miles downstream from confluence of East Nishnabotna and West Nishnabotna Rivers and 2 miles northeast of Hamburg, and at mile 11.0.
DRAINAGE AREA.--2,806 sq mi.
PERIOD OF RECORD.--March 1922 to September 1923, October 1928 to current year. Monthly discharge only for some periods published in WSP 1310.
GAGE.--Water-stage recorder. Datum of gage is 894.17 ft above mean sea level. See WSP 1730 for history of changes prior to Nov. 16, 1950.
AVERAGE DISCHARGE.--45 years, 939 cfs (4.54 inches per year, 680,300 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 25,200 cfs Sept. 15 (gage height, 27.42 ft); minimum daily, 32 cfs Oct. 10-14 (result of upstream diversion).

Period of record: Maximum discharge, 55,500 cfs June 24, 1947 (gage height, 26.03 ft, present site and datum, from floodmark); maximum gage height, 27.42 ft Sept. 15, 1972; minimum daily discharge, 4.5 cfs Aug. 30, 1934.
REMARKS.--Records good except those for winter period, which are poor. Diversion upstream from East and West Nishnabotna Rivers for wildlife preserve near Riverton. Records of periodic chemical analyses for the current year are pubished in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1240: 1923, 1929-37, 1938-40 (M), 1943 (M). WSP 1440: Drainage area.

Rating table (gage height, in feet and discharge, in cubic feet per second). (Shifting-control method used Oct. 15-31, Nov. 22, 23, Feb. 27 to Mar. 2, Apr. 29 to June 26, Sept. 11-29; stage-discharge relation affected by ice Dec. 26 to Feb. 26).

5.6	32	10.0	1,670
6.0	67	13.0	3,770
6.5	145	18.0	8,850
7.0	265	22.0	16,200
8.0	660	25.0	25,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	845	218	220	120	2,850	260	1,110	1,090	605	631	267
2	36	1,170	219	210	120	1,450	256	1,010	1,010	531	574	282
3	37	829	217	210	115	782	253	1,130	952	499	1,640	292
4	41	605	219	200	115	880	251	948	1,020	496	1,940	289
5	40	364	221	200	110	872	248	814	874	470	970	277
6	38	263	221	200	110	548	248	3,140	865	448	766	268
7	35	208	224	200	110	538	244	2,440	891	633	831	259
8	34	182	221	220	105	570	241	2,850	1,180	854	1,450	248
9	33	177	224	240	105	718	237	2,070	833	696	937	229
10	32	172	227	260	105	454	234	1,680	990	561	838	257
11	32	168	227	270	110	420	231	1,400	741	772	649	3,050
12	32	161	228	280	115	412	227	1,230	667	840	585	14,500
13	32	157	228	250	120	433	224	1,370	648	714	561	17,800
14	32	149	226	220	130	420	221	1,420	808	836	496	18,200
15	102	140	227	180	140	403	216	1,530	1,140	849	457	23,500
16	110	133	227	150	150	407	214	1,240	1,150	646	421	20,000
17	102	151	228	160	160	441	220	1,140	954	633	388	15,200
18	120	271	230	200	180	407	231	1,050	762	813	358	10,900
19	138	375	227	180	200	384	265	980	1,000	894	350	6,760
20	137	399	231	175	220	351	283	940	1,280	786	332	5,630
21	137	357	233	160	250	327	399	912	1,220	608	330	4,560
22	134	281	231	160	600	311	687	894	767	534	337	3,810
23	132	237	232	170	700	314	500	890	696	488	342	3,210
24	130	222	234	170	500	295	321	1,280	666	456	336	2,870
25	125	213	237	160	800	285	351	1,040	633	458	375	2,570
26	120	214	230	150	2,500	280	289	1,030	607	1,130	403	2,470
27	137	215	220	140	3,060	275	388	1,900	590	3,680	371	2,520
28	157	214	210	130	921	270	669	2,900	633	2,070	353	2,450
29	196	216	220	125	3,680	268	1,410	1,680	590	1,020	320	2,020
30	559	216	220	120	------	266	1,490	1,610	714	788	294	1,900
31	769	------	220	120	------	264	------	1,290	------	688	286	------
TOTAL	3,796	9,304	6,977	5,830	15,651	16,895	11,308	44,918	25,971	25,496	18,921	166,588
MEAN	122	310	225	188	540	545	377	1,449	866	822	610	5,553
MAX	769	1,170	237	280	3,680	2,850	1,490	3,140	1,280	3,680	1,940	23,500
MIN	32	133	210	120	105	264	214	814	590	448	286	229
CFSM	.04	.11	.08	.07	.19	.19	.13	.52	.31	.29	.22	1.98
IN.	.05	.12	.09	.08	.21	.22	.15	.60	.34	.34	.25	2.21
AC-FT	7,530	18,450	13,840	11,560	31,040	33,510	22,430	89,090	51,510	50,570	37,530	330,400

CAL YR 1971 TOTAL 262,290 MEAN 719 MAX 24,000 MIN 32 CFSM .26 IN 3.48 AC-FT 520,300
WTR YR 1972 TOTAL 351,655 MEAN 961 MAX 23,500 MIN 32 CFSM .34 IN 4.66 AC-FT 697,500

PEAK DISCHARGE (BASE, 9,000 CFS).--Sept. 15 (1400) 25,200 cfs (27.42 ft).

06811840 TARKIO RIVER AT STANTON, IOWA

LOCATION.--Lat 40°58'52", long 95°06'32", in NW1/4 SW1/4 sec.4, T.71 N., R.37 W., Montgomery County, on right bank 10 ft downstream from bridge on county highway, 0.1 mile downstream from Little Tarkio Creek, and 0.5 mile west of Stanton.
DRAINAGE AREA.--49.3 sq mi.
PERIOD OF RECORD.--October 1957 to current year. Annual maximum, water years 1952-57.
GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,104.67 ft above mean sea level.
AVERAGE DISCHARGE.--15 years, 23.1 cfs (6.36 inches per year, 16,740 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 4,440 cfs Sept. 12 (gage height, 16.46 ft); minimum daily, 0.04 cfs Oct. 9-17.

Period of record: Maximum discharge, 22,500 cfs June 9, 1967 (gage height, 28.56 ft), from rating curve extended above 1,600 cfs on basis of slope-area measurement of peak flow; no flow at times most years.
REMARKS.--Records fair except those for winter period or indefinite stage-discharge relation, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.
REVISIONS (WATER YEARS).--WSP 1919: 1960 (M).

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Stage-discharge relation affected by ice Dec. 13, 14, 29, 30, Jan. 29 to Feb. 17, stage-discharge relation indefinite Oct. 1-29).

8.82	0	9.0	5.5	9.9	157
8.85	.61	9.1	12	10.5	340
8.90	1.7	9.2	22	11.5	746
8.95	3.3	9.4	51	12.5	1,280

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	36	8.7	6.6	1.5	2.9	3.6	40	32	13	17	6.5
2	.06	17	9.4	5.9	1.6	1.7	3.4	28	28	12	16	7.2
3	.06	5.5	10	4.2	1.5	2.0	3.2	22	24	11	17	6.3
4	.05	5.0	11	3.8	1.4	1.7	3.7	20	25	11	14	6.5
5	.05	4.2	9.8	2.9	1.4	1.7	3.8	24	24	11	13	6.6
6	.05	3.3	12	2.9	1.5	3.7	3.3	202	22	12	13	5.9
7	.05	2.9	12	3.7	1.4	3.3	2.5	138	20	12	11	6.1
8	.05	3.7	12	4.4	1.4	1.5	2.4	94	19	11	15	5.3
9	.04	5.0	11	6.0	1.3	1.7	2.7	70	16	10	11	5.2
10	.04	4.1	12	5.5	1.3	2.0	2.7	57	14	9.8	11	8.7
11	.04	4.6	11	4.6	1.3	2.3	2.8	48	14	19	10	157
12	.04	4.1	7.8	5.0	1.4	2.6	3.3	48	15	17	8.8	1,220
13	.04	3.9	8.2	3.7	1.6	2.9	3.1	57	31	17	8.0	252
14	.04	3.5	9.0	2.6	1.7	3.3	2.0	45	297	12	7.3	282
15	.04	3.6	9.8	1.5	1.9	3.7	2.5	37	72	10	6.7	87
16	.04	4.1	6.8	1.2	3.5	3.3	5.1	32	51	9.6	6.2	69
17	.04	56	5.7	1.7	15	3.3	3.5	29	45	79	5.7	78
18	.06	46	6.7	5.5	7.7	4.1	2.4	26	40	50	5.6	50
19	.14	16	8.0	2.6	6.0	3.5	6.0	23	146	28	5.2	42
20	.15	11	7.3	2.9	4.6	3.6	6.4	21	124	22	5.1	36
21	.16	7.6	6.6	3.7	5.0	4.2	47	18	27	18	7.2	31
22	.16	7.1	6.3	3.7	2.6	3.0	19	17	23	16	5.6	30
23	.16	7.5	7.6	4.1	2.3	2.6	13	98	20	14	6.5	29
24	.15	7.7	6.7	4.1	2.9	2.5	11	98	19	13	6.3	28
25	.14	7.4	6.5	2.6	2.3	2.9	10	48	18	12	13	25
26	.12	8.2	5.6	2.0	2.0	3.0	9.2	52	17	343	9.2	32
27	.20	8.9	4.5	1.5	2.6	3.1	21	101	17	42	6.3	25
28	.30	9.1	4.2	1.3	5.0	2.8	63	57	16	28	5.8	30
29	1.0	9.8	4.5	1.3	6.5	2.9	31	71	14	23	5.3	29
30	15	9.1	6.0	1.3	------	3.0	27	47	13	19	5.1	28
31	10	------	6.1	1.4	------	4.0	------	35	------	17	5.5	------
TOTAL	28.53	321.9	252.8	104.2	90.2	88.8	319.6	1,703	1,243	921.4	282.4	2,624.3
MEAN	.92	10.7	8.15	3.36	3.11	2.86	10.7	54.9	41.4	29.7	9.11	87.5
MAX	15	56	12	6.6	15	4.2	63	202	297	343	17	1,220
MIN	.04	2.9	4.2	1.2	1.3	1.5	2.0	17	13	9.6	5.1	5.2
CFSM	.02	.22	.17	.07	.06	.06	.22	1.11	.84	.60	.18	1.77
IN.	.02	.24	.19	.08	.07	.07	.24	1.29	.94	.70	.21	1.98
AC-FT	57	638	501	207	179	176	634	3,380	2,470	1,830	560	5,210

CAL YR 1971 TOTAL 4,568.97 MEAN 12.5 MAX 450 MIN .04 CFSM .25 IN 3.45 AC-FT 9,060
WTR YR 1972 TOTAL 7,980.13 MEAN 21.8 MAX 1,220 MIN .04 CFSM .44 IN 6.02 AC-FT 15,830

PEAK DISCHARGE (BASE, 1,500 CFS).--June 19 (2345) 1,570 cfs (12.98 ft); Sept. 12 (0530) 4,440 cfs (16.46 ft).

06813500 MISSOURI RIVER AT RULO, NEBR.

LOCATION.--Lat 40°03'14", long 95°25'12", in NW1/4 NW1/4 sec.17, T.1 N., R.18 E., Richardson County, on downstream end of middle pier of bridge on U.S. Highway 159 at Rulo, 3.2 miles upstream from Nemaha River, and at mile 498.0.

DRAINAGE AREA.--418,900 sq mi, approximately.

PERIOD OF RECORD.--October 1949 to current year in reports of Geological Survey. Gage-height record collected at site 80 ft upstream January 1886 to December 1899 published in reports of Missouri River Commission; September 1929 to September 1950 in files of Kansas City office of Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above mean sea level. Prior to Sept. 13, 1950, nonrecording gage at site 80 ft upstream at same datum.

AVERAGE DISCHARGE.--23 years, 37,880 cfs (27,440,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 94,200 cfs Sept. 13 (gage height, 17.84 ft); minimum daily, 10,600 cfs Jan. 17; minimum gage height, 1.38 ft Jan. 17 (result of freezeup).

Period of record: Maximum discharge, 358,000 cfs Apr. 22, 1952 (gage height, 25.60 ft); minimum daily, 4,420 cfs Jan. 13, 1957; minimum gage height, 0.65 ft Jan. 7, 1971 (result of freezeup).

Flood in 1881 reached a stage of 22.9 ft, from floodmark (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Flow partly regulated by upstream main-stem reservoirs.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50,800	65,000	60,000	26,700	23,700	51,800	47,900	56,200	62,500	47,900	56,700	52,200
2	51,300	67,000	59,000	26,300	23,900	59,500	46,300	73,500	60,500	47,100	57,000	54,000
3	52,200	63,000	58,000	26,900	24,000	40,700	50,400	79,000	59,000	48,700	60,500	54,000
4	52,600	62,500	57,200	26,900	24,100	32,900	52,200	69,500	58,500	48,300	60,500	51,800
5	54,000	60,500	55,400	25,300	23,000	31,100	53,100	64,000	59,000	48,300	59,500	50,800
6	53,600	57,600	52,200	24,100	22,500	30,500	51,300	70,500	59,000	48,300	59,000	50,800
7	52,200	60,000	48,700	24,900	23,000	29,700	50,800	79,000	60,500	49,100	57,200	51,300
8	53,600	60,500	46,700	25,300	24,000	44,900	51,300	80,100	60,500	50,800	59,000	50,800
9	54,400	58,500	46,000	26,100	25,000	46,700	51,300	67,000	63,000	50,400	59,000	52,200
10	53,600	57,200	43,500	26,100	25,000	39,400	51,300	62,000	65,000	50,800	58,000	50,400
11	53,600	58,000	39,900	25,900	25,000	37,600	51,300	63,500	63,000	51,200	55,400	54,000
12	51,300	59,500	38,400	26,100	25,000	37,200	50,000	63,500	60,500	52,200	54,400	88,900
13	51,300	59,500	36,400	26,500	24,500	39,900	50,400	62,500	62,000	60,000	53,600	91,300
14	52,600	58,500	34,300	26,700	26,100	44,200	50,800	67,000	63,000	52,600	52,200	80,100
15	52,200	56,200	32,500	24,900	26,500	44,600	50,000	71,000	61,000	52,600	50,400	73,500
16	52,600	57,600	31,400	17,800	27,300	41,900	50,000	68,500	59,000	52,600	51,800	78,400
17	52,200	59,000	29,500	10,600	27,500	41,600	48,700	62,500	59,500	53,600	52,200	75,200
18	51,800	63,500	29,100	13,300	28,300	42,800	46,700	60,000	58,000	65,000	51,800	69,000
19	51,800	65,000	28,900	16,800	28,900	44,900	47,900	60,000	60,500	77,400	52,200	64,500
20	53,600	65,000	28,900	33,600	29,100	46,700	49,500	59,000	54,900	58,000	51,300	60,000
21	55,400	63,500	28,700	26,300	29,700	48,700	52,200	59,000	55,400	50,400	50,800	58,500
22	54,400	62,500	28,300	19,700	33,800	49,100	54,000	57,200	54,900	56,700	52,200	58,000
23	53,100	62,000	27,700	20,700	35,600	50,800	53,100	57,200	55,800	65,500	53,100	59,000
24	54,000	63,000	26,700	23,000	35,000	51,300	51,300	59,500	52,600	58,500	53,600	56,700
25	54,400	61,500	28,500	21,000	33,400	49,100	49,500	60,000	52,600	52,600	55,400	55,800
26	54,400	61,500	29,100	20,000	34,300	49,100	49,100	65,000	50,800	57,200	58,000	57,600
27	58,000	61,000	28,700	19,500	32,900	47,900	50,800	61,500	49,500	65,000	54,900	59,000
28	59,000	61,000	28,300	19,500	32,200	49,100	55,400	65,500	48,300	65,000	54,000	59,500
29	61,000	61,000	27,100	21,000	36,200	49,500	55,800	68,500	47,900	61,500	52,600	56,700
30	63,500	61,000	26,900	22,500	------	48,700	55,800	68,500	49,500	62,000	51,800	57,600
31	63,500	------	27,300	23,500	------	49,100	------	65,500	------	58,500	51,800	------
TOTAL	1,682.0M	1,831.6M	1,163.3M	717,500	809,500	1,371.0M	1,528.2M	2,025.7M	1,726.2M	1,717.8M	1,699.9M	1,831.6M
MEAN	54,260	61,050	37,530	23,150	27,910	44,230	50,940	65,350	57,540	55,410	54,840	61,050
MAX	63,500	67,000	60,000	33,600	36,200	59,500	55,800	80,100	65,000	77,400	60,500	91,300
MIN	50,800	56,200	26,700	10,600	22,500	29,700	46,300	56,200	47,900	47,100	50,400	50,400
AC-FT	3,336M	3,633M	2,307M	1,423M	1,606M	2,719M	3,031M	4,018M	3,424M	3,407M	3,372M	3,633M

CAL YR 1971 TOTAL 18,806,800 MEAN 51,530 MAX125,000 MIN 10,000 AC-FT 37,300,000
WTR YR 1972 TOTAL 18,104,300 MEAN 49,470 MAX 91,300 MIN 10,600 AC-FT 35,910,000

M Expressed in thousands.

06817000 NODAWAY RIVER AT CLARINDA, IOWA

LOCATION.--Lat 40°44'19", long 95°00'47", in SW1/4 NE1/4 sec.32, T.69 N., R.36 W., Page County, on downstream side of center bridge pier on State Highway 2, 0.5 mile downstream from North Branch, 1.2 miles east of city square of Clarinda, and 7.5 miles upstream from East Nodaway River.

DRAINAGE AREA.--762 sq mi.

PERIOD OF RECORD.--May 1918 to July 1925, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 960.36 ft above mean sea level. Prior to July 5, 1925, and May 28, 1936, to Mar. 26, 1957, nonrecording gage at same site and datum.

AVERAGE DISCHARGE.--42 years (1918-24, 1936-72), 294 cfs (5.24 inches per year, 213,000 acre-ft per year); median of yearly mean discharges, 250 cfs (4.5 inches per year, 181,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 27,000 cfs Sept. 13 (gage height, 20.00 ft); minimum daily, 13 cfs Oct. 7.

Period of record: Maximum discharge, 31,100 cfs June 13, 1947 (gage height, 25.3 ft, from floodmark), from rating curve extended above 15,000 cfs on basis of an overflow profile and extended channel rating; minimum daily, 1 cfs Sept. 5, 9, 12, 14, 1918, Dec. 9, 27-31, 1923.

Flood in August 1903 reached a stage of 25.4 ft, from floodmarks (discharge not determined).

REMARKS.--Records good except those for winter period or backwater from construction, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1240: 1918-20 (M), 1921, 1922-25 (M), 1936-38, 1942, 1943-45 (M), 1948. WSP 1440: Drainage area. WSP 1710: 1958, 1959 (P).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	180	75	50	14	230	39	375	299	106	247	69
2	16	140	70	50	14	110	40	367	265	100	218	76
3	15	100	70	50	14	100	40	283	237	100	230	72
4	15	80	70	48	14	95	40	247	216	100	240	72
5	14	60	70	45	14	90	41	240	204	93	192	70
6	14	45	70	45	14	90	43	4,600	209	86	175	69
7	13	35	70	46	14	86	39	3,740	179	93	209	67
8	15	30	70	50	14	102	34	2,170	164	96	278	65
9	17	31	70	54	14	72	34	1,420	151	81	250	60
10	16	32	76	56	14	67	34	940	141	72	177	69
11	15	31	72	58	14	67	32	694	131	70	143	2,920
12	15	28	67	58	14	74	32	605	125	96	131	16,400
13	15	26	50	54	16	74	35	1,300	123	104	129	25,500
14	15	24	59	45	20	76	31	1,120	744	179	117	15,100
15	15	22	69	30	25	72	30	711	1,850	168	109	4,240
16	14	22	62	28	30	70	40	556	517	117	98	2,620
17	15	40	54	30	40	79	52	466	339	133	89	4,600
18	20	160	48	35	50	74	56	401	278	2,720	84	6,300
19	24	300	50	35	60	65	46	350	252	978	79	2,080
20	28	200	52	30	80	62	65	317	584	475	76	1,500
21	28	70	53	27	120	60	140	291	283	364	76	1,150
22	27	55	49	25	140	58	233	263	216	278	74	908
23	26	51	58	23	200	53	162	294	186	235	76	798
24	24	50	56	22	140	47	111	582	168	206	70	711
25	22	50	56	17	120	43	93	499	155	186	84	711
26	20	50	54	15	100	44	84	353	155	2,680	98	1,000
27	20	55	48	14	100	44	93	345	149	2,230	104	947
28	20	60	45	14	100	44	559	370	137	582	81	607
29	25	70	47	14	192	44	751	847	129	407	69	940
30	80	80	50	14	------	41	364	642	115	296	67	862
31	200	------	50	14	------	41	------	384	------	252	69	------
TOTAL	819	2,177	1,859	1,096	1,701	2,274	3,393	25,777	8,701	13,683	4,134	90,583
MEAN	26.4	72.6	60.0	35.4	58.7	73.4	113	832	290	441	133	3,019
MAX	200	300	76	58	200	230	751	4,600	1,850	2,720	278	25,500
MIN	13	22	45	14	14	41	30	240	115	70	67	60
CFSM	.03	.10	.08	.05	.08	.10	.15	1.09	.38	.58	.17	3.96
IN.	.04	.11	.09	.05	.08	.11	.17	1.26	.42	.67	.20	4.42
AC-FT	1,620	4,320	3,690	2,170	3,370	4,510	6,730	51,130	17,260	27,140	8,200	179,700

CAL YR 1971 TOTAL 77,191 MEAN 211 MAX 8,660 MIN 13 CFSM .28 IN 3.77 AC-FT 153,100
WTR YR 1972 TOTAL 156,197 MEAN 427 MAX 25,500 MIN 13 CFSM .56 IN 7.63 AC-FT 309,800

PEAK DISCHARGE (BASE, 5,000 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-6	0400	10.70	7,620	9-13	2200	20.00	27,000
7-26	1400	9.76	6,200	9-18	0200	11.03	9,750

Note.--Stage-discharge relation indefinite Oct. 1 to Dec. 6.

06818750 PLATTE RIVER NEAR DIAGONAL, IOWA

LOCATION.--Lat 40°46'02", long 94°24'46", in NE1/4 SW1/4 sec.22, T.69 N., R.31 W., Ringgold County, on left bank at downstream side of bridge on county highway, 2.2 miles upstream from Turkey Creek, 4.6 miles southwest of Diagonal, and 4.9 miles downstream from Gard Creek.

DRAINAGE AREA.--217 sq mi.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,095.27 ft above mean sea level.

EXTREMES.--Current year: Maximum discharge, 5,970 cfs Sept. 13 (gage height, 22.54 ft); minimum daily, 1.4 cfs Oct. 17.

Period of record: Maximum discharge, 6,070 cfs May 24, 1971 (gage height, 22.24 ft); maximum gage height, 22.76 ft July 18, 1969; minimum daily discharge, 0.21 cfs Jan. 14, 15, 1969.

Flood of June 1967 reached a stage of 23.16 ft, from floodmark by local resident (discharge not determined).

REMARKS.--Records good except those for winter period, which are fair. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	224	22	16	4.5	30	11	88	32	11	20	11
2	2.5	508	17	15	4.2	28	11	63	31	9.7	20	16
3	2.7	84	17	13	3.5	25	11	44	26	9.4	24	7.8
4	2.4	35	18	11	3.0	22	11	40	24	9.1	22	4.9
5	2.6	21	19	9.0	2.8	18	11	44	23	8.6	16	4.5
6	2.1	16	29	8.0	2.7	13	9.6	65	23	7.6	13	4.0
7	1.8	12	54	9.0	2.7	16	8.9	1,280	21	7.5	35	3.1
8	1.6	9.5	45	10	2.6	14	8.9	711	18	7.4	33	2.7
9	1.5	8.8	39	12	2.4	12	8.9	264	16	8.1	33	2.7
10	1.8	12	70	15	2.6	11	7.8	149	15	6.7	18	148
11	1.6	12	81	18	2.8	11	7.2	109	14	7.5	11	2,220
12	1.6	9.5	48	14	3.0	14	7.5	93	13	6.6	9.2	5,020
13	1.6	8.2	28	11	3.2	23	7.8	277	12	9.6	7.5	5,470
14	1.6	7.3	30	8.0	3.5	26	7.8	184	112	13	6.9	1,930
15	1.5	6.5	33	6.0	4.0	22	7.5	122	160	14	6.0	603
16	1.7	6.5	30	6.6	5.0	23	9.6	87	73	10	6.0	233
17	1.4	7.0	18	8.0	40	22	13	71	50	22	5.7	206
18	2.4	27	26	10	60	20	11	58	81	109	5.4	282
19	3.1	46	17	9.0	70	20	9.6	49	48	177	5.2	130
20	4.9	19	19	8.6	64	18	22	42	37	138	4.9	92
21	11	12	15	8.0	54	17	113	37	37	54	5.4	77
22	7.7	8.5	13	7.0	45	18	142	33	26	31	5.2	66
23	6.8	6.8	13	6.0	42	16	61	33	22	22	5.7	51
24	3.9	6.9	16	5.0	39	13	39	94	19	29	5.2	47
25	3.2	8.6	16	4.5	37	12	31	86	17	26	6.6	44
26	2.9	10	15	4.2	36	12	27	58	15	362	6.9	40
27	3.9	16	12	4.1	34	13	26	114	14	453	7.8	41
28	3.3	26	10	4.0	33	14	54	89	13	110	6.9	32
29	11	23	11	4.2	31	14	77	59	12	62	5.7	34
30	38	25	12	4.3	------	13	55	52	12	38	4.5	37
31	44	------	14	4.4	------	11	------	38	------	24	4.5	------
TOTAL	178.1	1,222.1	807	272.9	637.5	541	827.1	4,533	1,016	1,802.8	366.2	16,859.7
MEAN	5.75	40.7	26.0	8.80	22.0	17.5	27.6	146	33.9	58.2	11.8	562
MAX	44	508	81	18	70	30	142	1,280	160	453	35	5,470
MIN	1.4	6.5	10	4.0	2.4	11	7.2	33	12	6.6	4.5	2.7
CFSM	.03	.19	.12	.04	.10	.08	.13	.67	.16	.27	.05	2.59
IN.	.03	.21	.14	.05	.11	.09	.14	.78	.17	.31	.06	2.89
AC-FT	353	2,420	1,600	541	1,260	1,070	1,640	8,990	2,020	3,580	726	33,440

CAL YR 1971 TOTAL 33,704.7 MEAN 92.3 MAX 4,610 MIN 1.4 CFSM .43 IN 5.78 AC-FT 66,850
WTR YR 1972 TOTAL 29,063.4 MEAN 79.4 MAX 5,470 MIN 1.4 CFSM .37 IN 4.98 AC-FT 57,650

PEAK DISCHARGE (BASE, 1,200 CFS).--May 7 (1400) 1880 cfs (13.26 ft); Sept. 13 (1315) 5,970 cfs (22.54 ft).

06819190 EAST FORK ONE HUNDRED AND TWO RIVER NEAR BEDFORD, IOWA

LOCATION.--Lat 40°38'01", long 94°44'41", in NE1/4 NE1/4 sec.9, T.67 N., R.34 W., Taylor County, on left bank at downstream side of bridge of county highway J55, 0.4 mile upstream from Daugherty Creek, and 2.8 miles southwest of junction of U.S. Highways 2 and 148 in Bedford.
DRAINAGE AREA.--92.1 sq mi.
PERIOD OF RECORD.--September 1959 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,057.51 ft above mean sea level (levels by Corps of Engineers). Prior to Oct. 1, 1968, at datum 5.00 ft higher.
AVERAGE DISCHARGE.--13 years, 41.6 cfs (6.13 inches per year, 30,140 acre-ft per year.
EXTREMES.--Current year: Maximum discharge, 2,960 cfs Sept. 12 (gage height, 11.81 ft); no flow Jan. 27.
Period of record: Maximum discharge, 7,160 cfs Apr. 26, 1969 (gage height, 15.95 ft); maximum gage height, 20.95 ft Jan. 12, 1960, present datum; no flow at times in 1966-68, 1972.
REMARKS.--Records fair except those for winter period, which are poor. Slight regulation at low flow by low dam used for water supply in Bedford. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Oct. 1-15, Mar. 26 to May 5; stage-discharge relation affected by ice Nov. 28 to Dec. 5, Dec. 8-22, Dec. 27 to Feb. 27, Mar. 2-5).

Oct. 1 to Apr. 25				Apr. 26 to Sept. 30			
3.54	.30	4.1	13	3.22	.24	3.7	15
3.6	.72	4.3	26	3.28	.50	4.3	78
3.7	1.7	4.7	78	3.34	.96	5.0	185
3.8	3.1	5.3	198	3.42	2.1	6.0	401
3.9	5.5			3.5	3.9	7.0	690
				3.6	7.9	9.7	1,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	102	2.8	1.8	.11	7.9	2.3	61	7.0	.62	2.2	.84
2	.80	190	2.7	1.9	.11	6.5	2.5	31	5.3	.61	2.7	.47
3	.36	15	2.8	2.0	.11	5.0	2.9	16	4.6	.64	47	.39
4	.36	4.6	3.3	1.2	.11	3.5	2.4	11	32	.56	11	.40
5	.36	2.8	3.4	.50	.11	3.0	2.2	9.3	15	.63	2.5	.37
6	.43	1.9	3.9	.50	.11	2.4	2.1	62	8.2	.59	1.2	.40
7	.44	1.6	8.3	.55	.11	3.0	2.7	907	6.0	.94	.88	.52
8	.48	1.6	5.0	.60	.11	2.0	2.1	337	2.1	.77	5.7	.47
9	.45	1.6	4.5	.70	.11	2.0	2.2	119	2.1	.72	3.2	.50
10	.52	1.6	4.5	.80	.11	3.1	2.1	63	2.5	.65	1.2	.82
11	.53	1.4	4.0	.90	.11	2.0	2.0	43	2.1	.71	.68	59
12	.66	1.3	3.5	1.0	.12	2.8	2.1	34	2.1	.68	.49	1,790
13	.64	1.4	3.5	.80	.15	6.6	2.1	191	2.1	.75	.45	649
14	.80	1.4	3.8	.30	.20	7.9	1.6	75	5.1	.82	.41	175
15	.75	1.3	4.0	.20	.50	6.0	1.9	48	16	1.9	.33	50
16	.94	1.6	3.8	.20	2.0	5.1	5.5	27	7.3	1.2	.31	33
17	.98	2.9	3.5	.25	4.0	5.3	4.5	23	3.4	86	.31	19
18	1.8	6.7	3.2	.40	6.0	6.4	3.9	17	1.6	182	.32	11
19	1.3	7.6	3.2	.40	8.0	5.7	4.1	11	2.1	112	.29	10
20	3.3	4.2	3.2	.35	7.0	4.4	8.2	8.4	27	57	.27	6.4
21	1.5	2.7	3.2	.25	5.0	4.0	77	7.8	7.0	9.1	.44	4.3
22	.88	2.1	2.7	.15	4.4	3.1	47	5.9	2.5	3.2	.36	3.7
23	.84	2.4	3.0	.12	3.8	2.8	13	435	1.8	1.9	.34	3.5
24	.87	2.1	3.5	.11	3.4	2.1	7.8	386	1.5	1.4	.39	3.7
25	.78	1.7	3.5	.10	3.2	2.1	5.4	81	1.2	1.8	1.6	3.9
26	.88	2.4	3.4	.05	3.0	2.2	4.7	36	1.1	214	.62	3.0
27	1.8	3.3	3.2	0	4.0	2.9	9.2	19	1.0	72	.44	2.8
28	.89	3.3	1.5	.11	6.1	2.5	52	18	.86	13	.32	2.8
29	6.1	3.2	1.5	.11	8.6	2.7	29	20	.80	7.3	.29	2.6
30	6.0	3.0	1.5	.11	------	2.4	20	46	.67	4.4	.31	2.9
31	2.8	------	1.7	.11	------	2.2	------	11	------	2.7	.35	------
TOTAL	39.54	378.7	105.3	16.57	70.68	119.6	324.5	3,159.4	172.03	780.59	86.90	2,840.78
MEAN	1.28	12.6	3.40	.53	2.44	3.86	10.8	102	5.73	25.2	2.80	94.7
MAX	6.1	190	8.3	2.0	8.6	7.9	77	907	32	214	47	1,790
MIN	.30	1.3	1.5	0	.11	2.0	1.6	5.9	.67	.56	.27	.37
CFSM	.01	.14	.04	.006	.03	.04	.12	1.11	.06	.27	.03	1.03
IN.	.02	.15	.04	.006	.03	.05	.13	1.28	.07	.32	.04	1.15
AC-FT	78	751	209	33	140	237	644	6,270	341	1,550	172	5,630

CAL YR 1971 TOTAL 8,793.49 MEAN 24.1 MAX 2,000 MIN .18 CFSM .26 IN 3.55 AC-FT 17,440
WTR YR 1972 TOTAL 8,094.59 MEAN 22.1 MAX 1,790 MIN 0 CFSM .24 IN 3.27 AC-FT 16,060

PEAK DISCHARGE (BASE, 2,000 CFS).--May 5 (2015) 2,520 cfs (11.04 ft); Sept. 12 (0945) 2,960 cfs (11.81 ft).

06897950 ELK CREEK NEAR DECATUR CITY, IOWA
(Hydrologic bench-mark station)

LOCATION.--Lat 40°43'18", long 93°56'19", near the southeast corner sec.34, T.69 N., R.27 W., Decatur County, on right bank 300 ft upstream from bridge on county highway, 700 ft downstream from West Elk Creek, 5.2 miles upstream from mouth, and 5.7 miles southwest of Decatur City.

DRAINAGE AREA.--52.5 sq mi.

GAGE.--Water-stage recorder. Datum of gage is 934.70 ft above mean sea level.

AVERAGE DISCHARGE.--5 years, 20.7 cfs (5.35 inches per year, 15,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 8,130 cfs Sept. 12 (gage height, 15.41 ft); no flow Oct. 1-28.

Period of record: Maximum discharge, 8,130 cfs Sept. 12, 1972 (gage height, 15.41 ft) from rating curve extended above 5,300 cfs on basis of step-backward computation; no flow at times.

Flood of June 14, 1967, reached a stage of 18.35 ft, (discharge, 15,000 cfs, estimated from rating curve extended above 5,300 cfs on basis of step-backward computation). Flood of Aug. 6, 1959 reached a stage between 20.5 and 22.5 ft 300 ft downstream, from information by assistant county engineer (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second). (Shifting-control method used Mar. 16, 17, Apr. 20, Apr. 22 to May 5, May 9-11, May 14-21, 23-26, 28, 29, Sept. 13-15; stage-discharge relation affected by ice Jan. 1 to Mar. 10).

2.5	0	3.2	8.5	5.0	250
2.6	.08	3.4	16	6.0	580
2.7	.55	3.7	34	7.0	970
2.8	1.4	4.0	62	9.0	2,000
3.0	4.0	4.5	138	11.0	3,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	128	1.0	4.5	.20	9.0	3.6	89	3.4	1.8	2.5	3.0
2	0	63	.81	3.5	.20	8.4	2.9	30	2.8	2.0	3.1	1.2
3	0	4.5	.86	2.5	.18	8.0	3.4	19	2.4	1.3	7.8	.87
4	0	1.6	1.2	1.6	.16	7.4	2.6	14	2.4	1.8	3.5	.66
5	0	.94	1.3	1.2	.14	6.8	2.8	12	2.5	1.1	2.2	.57
6	0	.48	1.9	.90	.13	5.6	2.8	795	3.3	1.1	4.3	.43
7	0	.22	2.2	1.0	.12	9.0	2.4	1,590	2.0	1.1	2.0	.52
8	0	.37	2.0	1.3	.12	7.4	1.8	152	1.6	1.2	1.7	.50
9	0	.48	2.0	2.0	.11	6.0	1.6	77	1.3	1.2	1.1	.41
10	0	.43	32	3.0	.12	5.0	1.7	45	.97	.98	.90	1.9
11	0	.31	14	2.5	.13	4.0	1.9	35	.86	.84	1.4	126
12	0	.31	5.5	1.8	.15	7.0	2.4	118	.81	1.7	1.2	2,810
13	0	.31	2.5	1.2	.17	11	2.9	264	.83	1.1	1.0	63
14	0	.29	4.1	.60	.20	15	2.1	74	3.8	.60	.85	234
15	0	.26	48	.40	.25	12	1.8	41	5.0	.72	.77	28
16	0	.28	15	.35	.35	10	2.8	29	1.9	.66	.77	15
17	0	.61	8.0	.45	6.0	8.2	2.2	20	302	19	.69	9.7
18	0	2.1	5.2	.70	25	7.2	1.4	15	29	20	.55	7.5
19	0	1.2	6.2	.66	40	6.2	4.7	11	15	267	.55	5.6
20	0	.60	6.9	.60	35	5.5	8.7	10	10	17	.48	5.3
21	0	.36	4.7	.50	25	5.5	187	8.5	7.6	6.8	.43	5.9
22	0	.23	3.3	.56	17	4.3	45	7.2	5.7	5.0	.37	3.8
23	0	.28	5.2	.60	14	3.6	19	8.5	3.7	3.7	.26	3.6
24	0	.46	6.0	.52	13	3.3	12	21	3.3	3.6	.48	3.8
25	0	.48	5.9	.40	12	3.4	9.6	9.5	3.1	2.8	1.1	3.4
26	0	.64	8.1	.25	11	3.8	8.1	6.5	2.8	365	1.6	3.0
27	0	.93	3.5	.18	10	4.2	10	8.4	2.7	21	.55	2.8
28	0	1.1	2.4	.15	9.6	4.2	18	9.0	2.7	7.8	.31	3.8
29	.95	1.7	2.8	.16	9.2	3.2	11	8.0	1.9	5.1	.14	4.7
30	2.3	1.5	6.7	.17	------	2.8	114	5.7	2.0	3.1	.05	3.0
31	.85	------	5.5	.19	------	3.3	------	4.2	------	2.4	1.1	------
TOTAL	4.10	213.97	214.77	34.44	229.53	200.3	490.2	3,536.5	427.37	768.50	43.75	3,351.96
MEAN	.13	7.13	6.93	1.11	7.91	6.46	16.3	114	14.2	24.8	1.41	112
MAX	2.3	128	48	4.5	40	15	187	1,590	302	365	7.8	2,810
MIN	0	.22	.81	.15	.11	2.8	1.4	4.2	.81	.60	.05	.41
CFSM	.003	.14	.13	.02	.15	.12	.31	2.17	.27	.47	.03	2.13
IN.	.002	.15	.15	.02	.16	.14	.35	2.51	.30	.54	.03	2.38
AC-FT	8.1	424	426	68	455	397	972	7,010	848	1,520	87	6,650

CAL YR 1971 TOTAL 4,018.68 MEAN 11.0 MAX 400 MIN 0 CFSM .21 IN 2.85 AC-FT 7,970
WTR YR 1972 TOTAL 9,515.39 MEAN 26.0 MAX 2,810 MIN 0 CFSM .50 IN 6.74 AC-FT 18,870

PEAK DISCHARGE (BASE, 500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	0445	11.46	3,480	7-19	1115	7.76	1,360
5-12	2330	7.42	1,220	7-26	0730	9.71	2,470
6-17	1345	9.64	2,400	9-12	1145	15.41	8,130

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA

LOCATION.--Lat 40°38'25", long 93°48'29", in SE1/4 SE1/4 sec.35, T.68 N., R.26 W., Decatur County, on right bank 15 ft downstream from bridge on U.S. Highway 69 at Davis City, 2.6 miles upstream from Dickersons Branch, and 5.2 miles upstream from Iowa-Missouri State line.

DRAINAGE AREA.--701 sq mi.

PERIOD OF RECORD.--May 1918 to July 1925, July 1941 to current year. Monthly discharge only for some periods, published in WSP 1310. Prior to October 1918, published as "Grand River".

GAGE.--Water-stage recorder. Datum of gage is 874.04 ft above mean sea level. May 14, 1918, to July 2, 1925, July 14, 1941, to Feb. 24, 1942, nonrecording gage, and Feb. 25, 1942, to Feb. 8, 1967, water-stage recorder at same site at datum 2.00 ft higher.

AVERAGE DISCHARGE.--37 years (1918-24, 1941-72), 342 cfs (6.63 inches per year, 247,800 acre-ft per year); median of yearly mean discharges, 301 cfs (5.8 inches per year, 218,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 10,600 cfs Sept. 16 (gage height, 12.45 ft); minimum daily, 2.5 cfs Oct. 11, 12.

Period of record: Maximum discharge, 21,300 cfs June 14, 1947 (gage height, 20.14 ft), from rating curve extended above 17,000 cfs on basis of velocity-area study; minimum daily, 0.1 cfs June 25, 1956.

Flood of Aug. 8, 1885, reached a stage of 22.8 ft, from floodmark (discharge, 30,000 cfs, from rating curve extended above 17,000 cfs on basis of velocity-area study).

REMARKS.-- Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

REVISIONS (WATER YEARS).--WSP 1240: 1918, 1920-21 (M), 1922-24, 1925 (M), 1946-47 (M). WSP 1440: Drainage area. WSP 1710: 1957.

Rating table (gage height, in feet and discharge, in cubic feet per second).
(Shifting-control method used Sept. 12-21; stage-discharge relation affected by ice Dec. 27 to Mar. 8).

1.13	2.3	1.7	51	4.0	1,160
1.2	5.0	2.0	95	7.0	4,000
1.3	11	2.4	194	10.0	7,610
1.4	18	3.0	440	12.0	10,500

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	371	47	45	12	120	46	763	178	48	123	63
2	4.5	1,840	44	35	12	86	43	446	143	46	109	34
3	3.7	948	41	24	11	110	43	232	116	39	99	25
4	4.3	271	40	32	11	100	41	160	98	34	98	21
5	3.6	124	41	40	10	90	41	129	89	31	94	19
6	3.1	77	45	38	10	76	40	812	83	31	95	17
7	2.9	55	51	28	10	70	39	6,260	81	29	97	17
8	3.0	43	62	23	10	64	36	4,960	75	28	297	16
9	3.5	36	67	26	9.0	55	33	2,150	71	27	143	15
10	3.2	33	127	30	9.6	51	31	1,070	65	27	119	15
11	2.5	30	272	35	10	54	30	639	58	26	104	116
12	2.5	29	223	40	11	63	31	458	61	26	92	4,720
13	2.6	28	99	38	13	123	40	1,520	105	26	83	5,260
14	2.9	26	77	32	13	133	35	1,670	80	26	75	5,270
15	3.1	26	467	26	40	109	33	1,000	84	29	69	7,760
16	3.3	26	262	24	56	103	34	590	803	29	64	10,200
17	3.4	27	166	27	70	97	37	395	834	40	58	6,640
18	3.4	51	71	30	90	88	46	299	548	91	52	1,020
19	5.2	39	87	29	140	77	50	239	274	805	47	1,860
20	7.8	44	82	27	150	72	72	201	176	987	43	1,600
21	21	39	68	26	150	67	923	175	126	408	40	543
22	13	33	56	24	130	63	1,240	155	97	184	36	394
23	12	38	59	21	110	58	426	144	107	127	33	329
24	6.3	32	59	18	130	53	226	153	85	98	30	279
25	9.6	28	60	16	120	50	151	163	72	78	30	249
26	6.9	28	62	14	100	46	112	194	68	878	30	227
27	6.8	29	52	12	80	47	98	166	62	530	29	202
28	5.3	31	45	12	76	48	109	290	58	611	29	209
29	13	44	38	10	100	50	124	287	54	306	28	217
30	53	48	44	10	------	49	236	366	50	166	27	177
31	77	------	50	11	------	47	------	203	------	143	27	------
TOTAL	306.3	4,476	2,904	792	1,698.6	2,319	4,446	26,289	4,801	5,954	2,299	47,514
MEAN	9.88	149	93.7	25.5	58.6	74.8	148	848	160	192	74.2	1,584
MAX	77	1,840	467	45	150	133	1,240	6,260	834	987	297	10,200
MIN	2.5	26	38	10	9.0	46	30	129	50	26	27	15
CFSM	.01	.21	.13	.04	.08	.11	.21	1.21	.23	.27	.11	2.26
IN.	.02	.24	.15	.04	.09	.12	.24	1.40	.25	.32	.12	2.52
AC-FT	608	8,880	5,760	1,570	3,370	4,600	8,820	52,140	9,520	11,810	4,560	94,240

CAL YR 1971 TOTAL 87,287.1 MEAN 239 MAX 5,000 MIN 2.5 CFSM .34 IN 4.63 AC-FT 173,100
WTR YR 1972 TOTAL 103,738.9 MEAN 284 MAX 10,200 MIN 2.5 CFSM .41 IN 5.51 AC-FT 205,900

PEAK DISCHARGE (BASE, 4,500 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-7	0930	9.63	7,160	9-16	1200	12.45	10,600
9-12	2030	10.82	8,470				

06898400 WELDON RIVER NEAR LEON, IOWA

LOCATION.--Lat 40°41'45", long 93°38'07", in NE1/4 NE1/4 sec.17, T.68 N., R.24 W., Decatur County, on left bank 10 ft downstream from bridge on county highway A, 200 ft upstream from unnamed creek, 1.3 miles downstream from Brush Creek, and 6.5 miles southeast of Post Office at Leon.
DRAINAGE AREA.--104 sq mi.
PERIOD OF RECORD.--October 1958 to current year.
GAGE.--Water-stage recorder. Datum of gage is 906.26 ft above mean sea level.
AVERAGE DISCHARGE.--14 years, 67.1 cfs (8.76 inches per year, 48,610 acre-ft per year); median of yearly mean discharges, 49 cfs (6.4 inches per year, 35,500 acre-ft per year).
EXTREMES.--Current year: Maximum discharge, 5,980 cfs Sept. 14 (gage height, 17.20 ft); minimum daily, 0.04 cfs Oct. 1.

Period of record: Maximum discharge, 48,600 cfs Aug. 6, 1959 (gage height, 25.27 ft), from rating curve extended above 5,600 cfs on basis of contracted-opening and flow-over-embankment measurement of peak flow; no flow many days in 1968.

Stage and discharge of the flood of Aug. 6, 1959, are the greatest since at least 1919.
REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical analyses for the current year are published in Part 2 of this report.

Rating table (gage height, in feet, and discharge, in cubic feet per second).
(Shifting-control method used Dec. 15, 16, Sept. 13-30; stage-discharge relation affected by ice Dec. 13, 14, Dec. 18 to Mar. 8).

4.5	0.02	5.4	41
4.6	.19	6.0	108
4.7	.83	7.0	290
4.8	2.5	8.0	540
4.9	5.6	10.0	1,250
5.0	10	13.0	2,940

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	327	2.4	11	1.3	22	12	334	5.8	3.9	4.5	.47
2	.27	346	1.7	10	1.3	15	11	147	4.4	3.6	4.7	1.0
3	.25	30	1.7	7.0	1.2	12	10	87	3.5	3.6	26	2.5
4	.16	9.9	2.0	5.0	1.1	10	8.9	52	2.6	3.4	8.1	3.0
5	.17	4.9	2.4	3.5	1.1	9.0	7.6	33	1.8	3.3	2.5	4.2
6	.09	3.1	5.5	4.5	1.0	8.0	7.6	484	13	3.3	74	4.2
7	.10	2.3	7.6	6.0	.98	9.0	7.1	2,290	16	3.0	16	4.5
8	.14	2.2	4.9	8.0	.96	7.8	5.2	636	8.4	3.0	6.3	4.5
9	.13	2.3	4.4	12	.90	5.7	4.3	209	39	3.0	3.6	4.2
10	.14	2.0	79	15	.96	5.3	4.2	103	69	2.8	1.7	4.5
11	.16	1.7	60	11	1.2	6.2	4.4	59	15	2.8	1.0	7.3
12	.14	1.5	23	8.0	2.0	50	9.6	42	6.9	2.8	.78	2,660
13	.17	1.4	12	6.0	10	87	10	235	3.6	2.9	.58	1,440
14	.20	1.2	11	3.0	70	37	6.3	141	120	2.8	.46	2,390
15	.18	1.1	616	2.0	45	38	4.5	81	83	2.3	.39	184
16	.20	1.3	68	3.5	25	37	5.8	55	35	1.9	.33	88
17	.20	1.4	33	5.0	50	26	9.0	41	22	1.9	.29	52
18	.31	28	25	7.0	40	19	5.8	33	17	4.2	.23	24
19	1.1	9.7	20	6.0	22	15	16	28	13	441	.22	14
20	3.2	3.8	15	5.0	18	14	36	24	10	114	.22	12
21	1.6	2.2	11	4.5	16	14	522	21	8.2	17	.23	9.2
22	.48	1.5	8.6	4.0	14	13	146	18	7.1	4.6	.26	7.3
23	.40	1.3	8.0	4.5	13	9.2	43	12	6.2	2.6	.26	6.0
24	.32	1.4	9.0	4.2	12	7.2	22	12	5.8	1.8	.28	4.4
25	.28	1.3	7.6	2.5	11	7.3	13	13	5.3	1.4	.60	3.3
26	.27	1.6	7.0	1.5	10	7.9	7.8	11	4.9	476	1.2	2.7
27	1.2	2.5	6.4	1.2	10	13	8.1	10	4.5	98	.37	2.1
28	.45	3.0	8.0	1.0	14	18	22	21	4.4	25	.22	1.9
29	11	3.9	5.6	1.1	25	15	18	25	4.2	14	.15	2.3
30	21	3.5	10	1.1	------	10	313	20	3.9	8.1	.19	1.8
31	9.2	------	14	1.2	------	10	------	9.7	------	5.6	.19	------
TOTAL	53.55	803.0	1,089.8	165.3	419.00	557.6	1,300.2	5,286.7	543.5	1,263.6	155.85	6,945.37
MEAN	1.73	26.8	35.2	5.33	14.4	18.0	43.3	171	18.1	40.8	5.03	232
MAX	21	346	616	15	70	87	522	2,290	120	476	74	2,660
MIN	.04	1.1	1.7	1.0	.90	5.3	4.2	9.7	1.8	1.4	.15	.47
CFSM	.02	.26	.34	.05	.14	.17	.42	1.64	.17	.39	.05	2.23
IN.	.02	.29	.39	.06	.15	.20	.47	1.89	.19	.45	.06	2.48
AC-FT	106	1,590	2,160	328	831	1,110	2,580	10,490	1,080	2,510	309	13,780

CAL YR 1971 TOTAL 11,504.92 MEAN 31.5 MAX 1,000 MIN .02 CFSM .30 IN 4.12 AC-FT 22,820
WTR YR 1972 TOTAL 18,583.47 MEAN 50.8 MAX 2,660 MIN .04 CFSM .49 IN 6.65 AC-FT 36,860

PEAK DISCHARGE (BASE, 4,500 CFS).--Sept. 12 (1200) 5,850 cfs (17.19 ft); Sept. 14 (0230) 5,980 cfs (17.20 ft).

06903400 CHARITON RIVER NEAR CHARITON, IOWA

LOCATION.--Lat 40°57'12", long 93°15'37", in SW1/4 NE1/4 sec.15, T.71 N., R.21 W., Lucas County, on right bank 15 ft downstream from bridge on county highway S43, 0.4 mile downstream from Wolf Creek, and 5.0 miles southeast of Chariton.

DRAINAGE AREA.--182 sq mi.

PERIOD OF RECORD.--October 1965 to current year. Occasional low-flow measurements, water years 1958-60, 1962, 1964.

GAGE.--Water-stage recorder. Datum of gage is 917.96 ft above mean sea level (levels by U.S. Weather Bureau from a Corps of Engineers bench mark).

AVERAGE DISCHARGE.--7 years, 70.9 cfs (5.29 inches per year, 51,370 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 2,820 cfs Sept. 14 (gage height, 18.08 ft); minimum daily, 0.48 cfs Oct. 1, 2.

Period of record: Maximum discharge, 6,320 cfs Aug. 8, 1970 (gage height, 20.15 ft); minimum daily, 0.1 cfs Sept. 28, Oct. 2-6, Nov. 5-7, 1966.

Flood in March 1960 reached a stage of about 23 ft (discharge, about 15,000 cfs) and flood of June 5, 1947 reached a stage of 21.65 ft, from floodmark (discharge, 11,000 cfs). A discharge of 0.08 cfs was measured on Oct. 30, 1963.

REMARKS.--Records good except those for winter period, which are poor. Records of chemical analyses, water temperatures, and suspended-sediment loads for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	36	8.9	23	1.7	32	17	158	17	.89	7.2	1.8
2	.48	275	11	19	1.7	30	18	81	[illegible]	.92	6.3	4.0
3	.58	156	12	18	1.7	26	16	81	8.9	1.6	6.9	8.9
4	.62	186	12	16	1.7	23	16	51	7.7	1.2	5.2	36
5	.57	81	12	13	1.7	20	15	26	9.8	1.0	3.9	20
6	.63	32	12	10	1.7	17	15	20	67	.91	489	12
7	.72	19	13	8.2	1.7	16	14	468	39	.90	380	8.6
8	.82	13	17	7.2	1.7	14	12	1,340	22	.81	131	6.2
9	.67	9.7	17	15	1.4	12	10	1,070	37	.81	55	4.6
10	.64	6.8	25	15	1.5	11	9.5	1,140	15	.81	27	5.3
11	.62	5.5	30	17	1.6	12	9.1	562	7.9	.75	15	18
12	.62	4.8	45	13	1.6	16	12	105	5.2	.74	10	744
13	.62	4.3	74	10	1.7	77	20	192	4.3	.78	7.5	1,770
14	.62	3.5	27	7.0	2.0	67	15	192	21	.94	6.1	2,000
15	.62	3.3	199	5.0	6.0	85	11	189	170	1.5	4.7	1,940
16	.64	3.0	213	8.0	35	82	17	98	37	1.6	3.9	1,240
17	.67	3.2	203	6.0	100	57	34	52	12	1.8	3.5	921
18	.65	4.2	192	5.0	140	48	24	32	10	3.3	2.9	315
19	.72	6.8	101	5.6	150	42	20	21	15	22	2.6	55
20	1.5	6.8	50	6.0	160	33	56	15	9.8	94	2.3	37
21	3.4	10	29	5.8	120	27	329	12	6.7	109	2.5	26
22	3.2	22	19	5.6	80	24	396	9.9	5.0	95	2.3	20
23	2.1	15	19	5.4	56	21	270	8.1	3.9	34	2.2	16
24	1.6	10	20	5.0	40	17	159	8.2	3.3	18	2.1	14
25	2.0	7.8	20	4.5	30	16	61	11	2.8	9.8	16	12
26	1.5	6.5	19	3.8	25	15	36	14	2.3	68	16	11
27	1.2	6.3	17	3.0	20	15	25	9.9	1.8	140	7.9	9.2
28	1.0	6.3	17	2.2	22	15	20	14	1.7	46	5.7	8.0
29	1.9	6.9	14	2.0	28	16	19	326	1.8	45	3.1	11
30	3.3	8.2	19	1.9	------	14	27	56	1.6	24	1.9	11
31	5.3	------	22	1.8	------	14	------	28	------	12	1.7	------
TOTAL	39.99	958.9	1,488.9	268.0	1,035.4	914	1,702.6	6,390.1	558.5	738.06	1,231.4	9,285.6
MEAN	1.29	32.0	48.0	8.65	35.7	29.5	56.8	206	18.6	23.8	39.7	310
MAX	5.3	275	213	23	160	85	396	1,340	170	140	489	2,000
MIN	.48	3.0	8.9	1.8	1.4	11	9.1	8.1	1.6	.74	1.7	1.8
CFSM	.007	.18	.26	.05	.20	.16	.31	1.13	.10	.13	.22	1.70
IN.	.008	.20	.30	.05	.21	.19	.35	1.31	.11	.15	.25	1.90
AC-FT	79	1,900	2,950	532	2,050	1,810	3,380	12,670	1,110	1,460	2,440	18,420

CAL YR 1971 TOTAL 15,652.26 MEAN 42.9 MAX 778 MIN .48 CFSM .24 IN 3.20 AC-FT 31,050
WTR YR 1972 TOTAL 24,611.45 MEAN 67.2 MAX 2,000 MIN .48 CFSM .37 IN 5.03 AC-FT 48,820

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
5-8	0800	16.32	1,390	9-14	1930	18.08	2,820
9-13	1015	17.29	1,990				

06903700 SOUTH FORK CHARITON RIVER NEAR PROMISE CITY, IOWA

LOCATION.--Lat 40°48'02", long 93°11'32", in SW1/4 SW1/4 sec.5, T.69 N., R.20 W., Wayne County, on right bank 20 ft downstream from bridge on county highway S50, 1.3 miles downstream from Jordan Creek and 4.3 miles northwest of Promise City.

DRAINAGE AREA.--168 sq mi.

PERIOD OF RECORD.--October 1967 to current year. Occasional low-flow measurements, water years 1958-66, published as "near Bethlehem". Monthly discharge measurements for March 1965 to September 1967 available in files of Iowa City district office.

GAGE.--Water-stage recorder. Datum of gage is 913.70 ft above mean sea level (Corps of Engineers bench mark).

AVERAGE DISCHARGE.--5 years, 68.7 cfs (5.55 inches per year, 49,770 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,930 cfs Sept. 14 (gage height, 17.68 ft); minimum daily, 0.15 cfs Oct. 6, 7, 11, 12.

Period of record: Maximum discharge, 7,660 cfs Aug. 8, 1970 (gage height, 21.32 ft); minimum daily, 0.09 cfs July 29-30, 1970.

Flood of Sept. 21, 1965, reached a stage of 25.5 ft, from floodmarks (discharge not determined).

REMARKS.--Records good except those for winter period, which are poor. Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	101	8.2	34	1.0	30	34	308	28	7.3	7.8	2.8
2	4.8	553	7.4	20	1.0	26	30	80	22	7.9	8.2	3.5
3	.52	54	7.1	14	.96	20	25	39	18	9.0	9.7	3.7
4	.29	14	6.8	11	.94	15	24	25	15	9.2	11	4.3
5	.21	4.9	7.4	8.0	.92	15	22	20	15	8.6	11	3.8
6	.15	2.5	7.8	9.0	.90	14	20	20	384	8.8	1,100	3.3
7	.15	2.1	8.6	10	.86	13	19	757	83	9.3	359	3.3
8	.18	1.8	9.4	11	.84	12	16	1,170	30	11	62	3.4
9	.18	2.0	9.8	12	.80	11	15	284	19	11	45	3.1
10	.18	1.6	11	12	.84	9.9	14	97	17	10	33	3.1
11	.15	1.6	10	10	.90	10	14	57	21	8.0	20	4.0
12	.15	1.8	9.4	7.6	1.2	18	23	41	16	6.1	14	597
13	.18	1.8	8.6	6.0	2.0	117	21	235	14	9.8	12	518
14	.18	2.5	10	4.5	10	65	18	128	138	10	11	3,090
15	.18	2.5	624	3.0	250	49	16	68	518	5.4	9.6	731
16	.18	2.5	194	3.3	220	61	68	42	69	5.1	8.4	81
17	.21	3.3	61	3.7	450	46	70	28	26	6.6	7.3	43
18	.25	5.4	40	4.0	200	33	29	21	18	23	6.1	28
19	.65	7.3	27	4.0	120	26	28	17	14	54	5.3	20
20	1.9	9.3	21	3.9	70	23	91	15	8.7	67	5.0	15
21	2.8	7.8	18	3.7	50	21	1,070	13	5.9	30	5.2	17
22	2.5	6.1	15	3.5	40	19	466	12	5.0	18	5.8	14
23	2.2	5.8	15	3.0	30	16	99	13	4.4	11	5.5	13
24	2.4	5.8	15	2.5	22	14	51	19	3.8	9.0	5.1	11
25	3.1	5.5	15	2.0	18	13	35	19	3.9	8.4	17	10
26	2.2	4.9	16	1.4	16	14	27	17	3.9	69	20	9.7
27	2.1	5.5	14	1.1	14	31	23	16	4.2	109	15	8.6
28	2.1	6.8	13	.90	19	53	22	31	5.2	32	9.5	21
29	2.1	8.2	12	.94	24	38	23	652	6.8	16	5.2	37
30	2.7	8.6	28	.96	------	38	42	133	7.0	10	2.9	25
31	2.9	------	40	.98	------	37	------	55	------	8.3	2.5	------
TOTAL	42.19	839.9	1,289.5	211.98	1,566.16	907.9	2,455	4,432	1,523.8	607.8	1,839.1	5,327.6
MEAN	1.36	28.0	41.6	6.84	54.0	29.3	81.8	143	50.8	19.6	59.3	178
MAX	4.8	553	624	34	450	117	1,070	1,170	518	109	1,100	3,090
MIN	.15	1.6	6.8	.90	.80	9.9	14	12	3.8	5.1	2.5	2.8
CFSM	.008	.17	.25	.04	.32	.17	.49	.85	.30	.12	.35	1.06
IN.	.009	.19	.29	.05	.35	.20	.54	.98	.34	.13	.41	1.18
AC-FT	84	1,670	2,560	420	3,110	1,800	4,870	8,790	3,020	1,210	3,650	10,570

CAL YR 1971 TOTAL 35,364.78 MEAN 96.9 MAX 4,730 MIN .09 CFSM .58 IN 7.83 AC-FT 70,150
WTR YR 1972 TOTAL 21,042.93 MEAN 57.5 MAX 3,090 MIN .15 CFSM .34 IN 4.66 AC-FT 41,740

PEAK DISCHARGE (BASE, 1,200 CFS)

DATE	TIME	G. H.	DISCHARGE	DATE	TIME	G. H.	DISCHARGE
4-21	1645	11.48	1,740	9-12	2230	10.29	1,350
5-8	0030	11.24	1,670	9-14	1830	17.68	3,930
8-6	1430	11.22	1,660				

06903880 RATHBUN LAKE NEAR RATHBUN, IOWA

LOCATION.--Lat 40°49'30", long 92°53'33", in NW1/4 NE1/4 sec.35, T.70 N., R.18 W., Appanoose County, at control tower of Rathbun Dam, 1.8 miles north of Rathbun and 3.9 miles upstream from Walnut Creek and at mile 142.3.

DRAINAGE AREA.--549 sq mi.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level.

EXTREMES.--Current year: Maximum contents, 233,000 acre-ft Sept. 19 (elevation, 906.38 ft); minimum, 183,000 acre-ft Mar. 10 (elevation, 901.85 ft).

Period of record: Maximum contents, 249,500 acre-ft Mar. 3, 1971 (elevation 907.76 ft); minimum, 100 acre-ft Oct. 1-15, Nov. 17-21, 1969; minimum elevation, 855.40 ft Oct. 6-10, 1969.

REMARKS.--Reservoir is formed by earthfill dam completed in 1969. Storage began in November 1969. Release is controlled by two hydraulically controlled slide gages, 6 ft wide and 12 ft high, into forechamber of an 11-ft diameter horseshoe conduit through the dam. No dead storage. Maximum design discharge through gates is 5,000 cfs. Uncontrolled notch spillway is concrete overflow section 500 ft in length, located about 3,000 ft west of the right abutment of the dam and provides emergency discharge into the adjacent drainage area of Little Walnut Creek. Uncontrolled notch spillway is at elevation 926 ft above mean sea level, contents 552,000 acre-ft. Conservation pool level is at elevation 904.0 ft, contents 205,000 acre-ft. Reservoir is used for flood control, low-flow augumentation, conservation and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

Capacity table (elevation, in feet, and contents, in acre-feet)

860	400	885	55,730
862	850	890	84,530
865	2,390	895	120,600
870	7,950	900	164,300
875	18,100	905	216,600
880	33,800	910	278,500

CONTENTS, IN ACRE-FEET, AT 0800, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	195,000	194,000	198,000	207,000	186,000	186,000	186,000	202,000	210,000	205,000	206,000	208,000
2	195,000	198,000	198,000	207,000	186,000	186,000	186,000	204,000	210,000	205,000	206,000	208,000
3	196,000	199,000	198,000	207,000	186,000	185,000	185,000	204,000	210,000	205,000	206,000	207,000
4	195,000	199,000	198,000	207,000	186,000	185,000	186,000	204,000	210,000	205,000	206,000	207,000
5	195,000	199,000	198,000	205,000	186,000	184,000	185,000	204,000	209,000	204,000	205,000	207,000
6	195,000	200,000	198,000	203,000	186,000	184,000	185,000	204,000	210,000	204,000	208,000	206,000
7	194,000	200,000	198,000	200,000	186,000	184,000	186,000	205,000	210,000	204,000	212,000	206,000
8	195,000	199,000	198,000	198,000	186,000	184,000	185,000	210,000	210,000	204,000	213,000	206,000
9	194,000	199,000	198,000	196,000	186,000	183,000	185,000	214,000	210,000	204,000	213,000	206,000
10	194,000	199,000	199,000	194,000	186,000	182,000	185,000	216,000	208,000	203,000	211,000	206,000
11	194,000	199,000	199,000	192,000	186,000	183,000	185,000	218,000	208,000	203,000	212,000	206,000
12	194,000	199,000	199,000	190,000	186,000	183,000	186,000	219,000	207,000	203,000	211,000	207,000
13	193,000	198,000	199,000	188,000	186,000	184,000	186,000	219,000	206,000	203,000	211,000	211,000
14	193,000	199,000	199,000	186,000	186,000	184,000	186,000	218,000	207,000	203,000	211,000	214,000
15	193,000	198,000	202,000	185,000	186,000	184,000	186,000	218,000	210,000	203,000	211,000	220,000
16	193,000	199,000	203,000	185,000	186,000	185,000	187,000	216,000	210,000	203,000	211,000	226,000
17	193,000	199,000	205,000	185,000	187,000	185,000	187,000	215,000	210,000	203,000	211,000	229,000
18	193,000	200,000	205,000	185,000	189,000	185,000	187,000	213,000	209,000	203,000	210,000	232,000
19	194,000	199,000	205,000	185,000	190,000	185,000	187,000	212,000	208,000	203,000	210,000	232,000
20	194,000	199,000	205,000	186,000	190,000	185,000	188,000	211,000	208,000	204,000	210,000	231,000
21	194,000	199,000	205,000	186,000	189,000	185,000	190,000	210,000	207,000	204,000	210,000	231,000
22	194,000	198,000	205,000	186,000	189,000	186,000	196,000	210,000	207,000	204,000	210,000	229,000
23	194,000	198,000	205,000	186,000	189,000	185,000	198,000	208,000	206,000	205,000	209,000	228,000
24	194,000	198,000	206,000	186,000	188,000	185,000	199,000	208,000	206,000	205,000	209,000	227,000
25	194,000	198,000	205,000	186,000	188,000	185,000	199,000	207,000	206,000	204,000	210,000	225,000
26	194,000	198,000	206,000	186,000	188,000	184,000	200,000	206,000	206,000	205,000	210,000	225,000
27	194,000	198,000	206,000	186,000	187,000	185,000	200,000	206,000	206,000	206,000	210,000	223,000
28	194,000	198,000	206,000	186,000	187,000	185,000	200,000	206,000	206,000	206,000	209,000	222,000
29	194,000	199,000	206,000	186,000	186,000	186,000	201,000	208,000	206,000	206,000	209,000	221,000
30	194,000	198,000	207,000	186,000	------	185,000	201,000	210,000	205,000	206,000	208,000	220,000
31	194,000	------	207,000	186,000	------	185,000	------	210,000	------	206,000	208,000	------
MAX	196,000	200,000	207,000	207,000	190,000	186,000	201,000	219,000	210,000	206,000	213,000	232,000
MIN	193,000	194,000	198,000	185,000	186,000	182,000	185,000	202,000	205,000	203,000	205,000	206,000
+	902.97	903.38	904.11	902.16	902.21	902.13	903.59	904.40	904.00	904.03	904.26	905.29
*	-1,200	+4,000	+9,000	-21,000	0	-1,000	+16,000	+9,000	-5,000	+1,000	+2,000	+12,000

CAL YR.....................*-600
WTR YR...................*+24,800

+ Elevation, in feet, at end of month.
* Change in contents, in acre-feet.

06903900 CHARITON RIVER NEAR RATHBUN, IOWA

LOCATION.--Lat 40°49'22", long 92°53'22", in SE1/4 NE1/4 sec.35, T.70 N., R.18 W., Appanoose County, on left bank 600 ft downstream from outlet of Rathbun Dam, 1.8 miles north of Rathbun and 3.7 miles upstream from Walnut Creek and at mile 142.1.

DRAINAGE AREA.--549 sq mi.

PERIOD OF RECORD.--October 1956 to current year. Monthly discharge only for some periods, published in WSP 1730.

GAGE.--Water-stage recorder. Datum of gage is 847.92 ft above mean sea level. Prior to Nov. 16, 1960, nonrecording gage and Nov. 17, 1960, to Sept. 30, 1969, recording gage, at site 3.1 miles downstream at datum 4.65 ft lower.

AVERAGE DISCHARGE.--16 years, 268 cfs (6.63 inches per year, 194,200 acre-ft per year); median of yearly mean discharges, 210 cfs (5.2 inches per year, 152,000 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 1,480 cfs Jan. 5 (gage height, 13.02 ft); minimum daily, 8.0 cfs July 27, 29.

Period of record: Maximum discharge, 21,800 cfs Mar. 31, 1960 (gage height, 25.3 ft, from floodmark, site and datum then in use); minimum daily, 0.1 cfs Oct. 12-14, 17-24, 1957, Oct. 11, 1966.

REMARKS.--Records good. Flow regulated by Rathbun Reservoir since Nov. 21, 1969 (see sta. 06903880). Records of periodic chemical and suspended-sediment analyses for the current year are published in Part 2 of this report.

REVISIONS.--WSP 1560: Drainage area.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	20	12	12	14	281	56	16	54	8.4	8.2	97
2	18	13	12	13	14	280	57	17	54	8.7	8.2	98
3	15	12	12	13	14	280	57	17	54	8.7	8.2	99
4	14	12	12	399	14	280	57	17	54	8.7	8.2	99
5	11	12	12	1,380	14	279	57	17	55	8.7	8.2	100
6	11	11	13	1,200	14	221	57	19	56	8.9	30	100
7	12	11	13	1,160	14	55	57	22	175	8.9	16	100
8	12	11	14	1,150	14	54	57	34	332	8.9	8.3	54
9	12	12	14	1,140	14	54	58	239	332	8.9	102	9.4
10	11	12	14	1,060	14	55	58	471	331	8.9	369	9.2
11	11	12	13	982	14	55	58	473	331	8.8	372	9.2
12	11	12	13	980	14	55	36	637	331	8.7	221	9.8
13	11	13	12	978	14	55	13	951	329	8.7	9.4	9.2
14	11	13	12	800	14	54	13	951	331	8.5	8.8	9.2
15	11	13	14	200	14	54	12	951	331	8.2	8.7	9.2
16	11	13	11	19	14	54	13	951	328	8.2	8.7	9.2
17	11	13	11	18	14	54	13	951	325	8.2	8.7	9.2
18	12	13	11	16	14	54	13	600	325	8.4	8.7	195
19	13	13	11	17	185	54	14	500	322	8.5	8.7	586
20	13	12	11	16	292	54	13	500	320	8.6	8.7	589
21	13	12	11	16	292	54	29	500	217	8.8	56	588
22	13	13	11	16	288	55	14	500	87	8.5	98	586
23	13	13	11	16	284	56	13	500	52	8.4	98	584
24	13	13	10	16	284	56	14	500	9.1	8.2	97	584
25	13	13	10	19	283	55	14	500	8.8	8.2	100	584
26	13	12	10	16	282	55	14	350	8.7	8.4	98	583
27	13	12	10	15	283	56	14	150	8.5	8.0	98	583
28	13	12	10	14	283	55	15	55	8.4	8.2	97	583
29	13	13	11	14	283	56	15	54	8.4	8.0	97	580
30	13	12	12	14	------	56	14	53	8.4	8.2	97	580
31	13	------	12	14	------	56	------	56	------	8.2	97	------
TOTAL	389	378	365	11,723	3,291	2,992	925	11,552	5,186.3	263.6	2,262.7	8,035.6
MEAN	12.5	12.6	11.8	378	113	96.5	30.8	373	173	8.50	73.0	268
MAX	18	20	14	1,380	292	281	58	951	332	8.9	372	589
MIN	11	11	10	12	14	54	12	16	8.4	8.0	8.2	9.2
AC-FT	772	750	724	23,250	6,530	5,930	1,830	22,910	10,290	523	4,490	15,940

CAL YR 1971 TOTAL 52,698.6 MEAN 144 MAX 1,020 MIN 7.6 AC-FT 104,500
WTR YR 1972 TOTAL 47,363.2 MEAN 129 MAX 1,380 MIN 8.0 AC-FT 93,940

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called either measurements at miscellaneous sites or supplemental low-flow measurements.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for low flow and high flow are given in a third or fourth table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of a stream. The column headed "Period of record" shows the period in which measurements were made for most water years at the same, or practically the same, site.

DISCHARGE MEASUREMENTS MADE AT LOW-FLOW PARTIAL-RECORD STATIONS DURING WATER YEAR 1972

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	MEASUREMENTS	
					DATE	DISCHARGE (CFS)
		MINNESOTA RIVER BASIN				
05317650	BLUE EARTH R NR LAKOTA, IOWA.	LAT 4330XX, LONG 9409XX, NEAR SE CORNER OF SEC.31, T.100 N., R.27 W., KOSSUTH COUNTY, AT BRIDGE, 4 MILES NE OF LAKOTA.	[illegible]	1957-	10-13-71	[illegible]
05317700	UNION SLOUGH OUTLET NR LAKOTA, IOWA.	LAT 4324XX, LONG 9407XX, NEAR S 1/4 CORNER OF SEC.11, T.99 N., R.28 W., KOSSUTH COUNTY, AT BRIDGE, 2 MILES NW OF LAKOTA.	86.6	1957-	10-13-71	[illegible]
05317810	WF BLUE EARTH R BL MINN.-IOWA STATE LINE.	LAT 4326XX, LONG 9404XX, NEAR W 1/4 CORNER OF SEC.36, T.101 N., R.28 W., FARIBAULT COUNTY, AT BRIDGE, 9 MILES NW OF LAKOTA.	154	1957-	10-13-71	2.6
		DES MOINES RIVER BASIN				
05476550	JACK CR NR RINGSTED, IOWA.	LAT 4316XX, LONG 9438XX, NEAR S 1/4 CORNER OF SEC.28, T.98 N., R.32 W., EMMET COUNTY, AT BRIDGE, 6 MILES SW OF RINGSTED.	74.8	1957-	10-14-71	.007
05476600	SILVER CR NR EMMETTSBURG, IOWA.	LAT 4304XX, LONG 9443XX, NEAR N 1/4 CORNER SEC.34, T.96 N., R.33 W., PALO ALTO COUNTY, AT BRIDGE, 3 MILES SW OF EMMETSBURG.	61.8	1957-	10-14-71	1.0
05476650	CYLINDER CR NR RODMAN, IOWA.	LAT 4302XX, LONG 9436XX, NEAR S 1/4 CORNER SEC.13, T.95 N., R.32 W., PALO ALTO COUNTY, AT BRIDGE, 2.5 MILES NW OF RODMAN.	88.6	1957-	10-14-71	1.9
05476700	PRAIRIE CR NR WEST BEND, IOWA.	LAT 4255XX, LONG 9427XX, NEAR N 1/4 CORNER SEC.36, T.94 N., R.31 W., PALO ALTO COUNTY, AT BRIDGE, 2.5 MILES SW OF WEST BEND.	61.1	1957-	10-14-71	.99
05476720	BEAVER CR NR ROLFE, IOWA.	LAT 4250XX, LONG 9428XX, NEAR CENTER OF SEC.35, T.93 N., R.31 W., POCAHONTAS COUNTY, AT BRIDGE, 3 MILES NE OF ROLFE.	62.2	1959-	10-15-71	.33
05476740	PILOT CR NR ROLFE, IOWA.	LAT 4249XX, LONG 9427XX, IN SE 1/4 SEC. 1, T.92 N., R.31 W., POCAHONTAS COUNTY, AT BRIDGE, 4 MILES EAST OF ROLFE.	97.0	1959-	10-15-71	1.6
05477600	EF DES MOINES R NR DOLLIVER, IOWA.	LAT 4328XX, LONG 9435XX, IN SW 1/4 SEC. 13, T.100 N., R.32 W., EMMET COUNTY, AT BRIDGE, 2 MILES NE OF DOLLIVER.	156	1957-	10-13-71	0.0

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

DISCHARGE MEASUREMENTS MADE AT LOW-FLOW PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	MEASUREMENTS DATE	MEASUREMENTS DISCHARGE (CFS)
		DES MOINES RIVER BASIN--CONTINUED				
05477700	EF DES MOINES R NR SWEA CITY, IOWA.	LAT 4319XX, LONG 9425XX, NEAR CENTER OF SEC.8, T.98 N., R.30 W., KOSSUTH COUNTY, AT BRIDGE, 7 MILES SW OF SWEA CITY.	314	1957-	10-13-71	0.0
05477800	MUD CR AT BANCROFT, IOWA.	LAT 4318XX, LONG 9412XX, NEAR CENTER OF SEC.19, T.98 N., R.29 W., KOSSUTH COUNTY, AT BRIDGE, 1 MILE EAST OF BANCROFT.	68.1	1957-	10-13-71	.15
05478050	BUFFALO CR NR TITONKA, IOWA.	LAT 4314XX, LONG 9359XX, IN NW 1/4 SEC. 12, T.97 N., R.27 W., KOSSUTH COUNTY, AT BRIDGE, 3 MILES EAST OF TITONKA.	47.9	1957-	10-13-71	0.0
05478100	N BUFFALO CR NR BUFFALO CENTER, IOWA.	LAT 4319XX, LONG 9358XX, IN NW 1/4 SEC. 18, T.98 N., R.26 W., WINNEBAGO COUNTY, AT BRIDGE, 5 MILES SOUTH BUFFALO CENTER.	62.5	1957-	10-13-71	.26
05478150	BLACK CAT CR NR LONE ROCK, IOWA.	LAT 4312XX, LONG 9420XX, NEAR S 1/4 CORNER SEC.24, T.97 N., R.30 W., KOSSUTH COUNTY, AT BRIDGE, 2 MILES SW OF LONE ROCK.	58.2	1957-	10-13-71	.007
05478200	BLACK CAT CR NR ALGONA, IOWA.	LAT 4308XX, LONG 9414XX, NEAR S 1/4 CORNER SEC.11, T.96 N., R.29 W., KOSSUTH COUNTY, AT BRIDGE ON U. S. HIGHWAY 169, 5 MILES NORTH OF ALGONA.	112	1957-	10-13-71	0.0
05478350	LOTTS CR NR WEST BEND, IOWA.	LAT 4356XX, LONG 9423XX, NEAR S 1/4 CORNER SEC.9, T.94 N., R.30 W., KOSSUTH COUNTY, AT BRIDGE, 3 MILES EAST OF WEST BEND.	56.2	1957-	10-14-71	1.2
05478400	LOTTS CR AT LIVERMORE, IOWA.	LAT 4252XX, LONG 9411XX, IN NE 1/4 SEC. 18, T.93 N., R.28 W., HUMBOLDT COUNTY, AT BRIDGE NEAR NW CITY LIMITS OF LIVERMORE.	165	1957-	10-14-71	1.6
05479600	LIZARD CR NR PALMER, IOWA	LAT 4239XX, LONG 9430XX, IN NW 1/4 SEC. 3, T.90 N., R.31 W., POCAHONTAS COUNTY, AT BRIDGE, 5 MILES NE OF PALMER.	66.4	1957-	10-15-71	.66
05479800	NB LIZARD CR NR HAVELOCK, IOWA.	LAT 4248XX, LONG 9440XX, IN NE 1/4 SEC. 18, T.92 N., R.32 W., POCAHONTAS COUNTY, AT BRIDGE, 4 MILES SE OF HAVELOCK.	79.4	1957-	10-15-71	.36
05479900	LIZARD CR NR GILMORE CITY, IOWA.	LAT 4238XX, LONG 9428XX, IN NW 1/4 SEC. 1, T.90 N., R.31 W., POCAHONTAS COUNTY, AT BRIDGE, 6 MILES SW OF GILMORE CITY.	219	1957-	10-15-71	2.0
05480100	SB LIZARD CR NR PALMER, IOWA.	LAT 4235XX, LONG 9432XX, IN SW 1/4 SEC. 29, T.90 N., R.31 W., POCAHONTAS COUNTY, AT BRIDGE, 4.5 MILES SE OF PALMER.	54.4	1957-	10-15-71	.001
05480300	SB LIZARD CR NR FORT DODGE, IOWA.	LAT 422950, LONG 941359, IN NE 1/4 SEC. 26, T.89 N., R.29 W., WEBSTER COUNTY, AT BRIDGE, 3 MILES WEST OF FORT DODGE.	154	1957-	10-14-71	.17
05480620	BRUSHY CR NR HOMER, IOWA.	LAT 4223XX, LONG 9359XX, IN SE 1/4 SEC. 34, T.88 N., R.27 W., WEBSTER COUNTY, AT BRIDGE, 3 MILES NW OF HOMER.	46.6	1957-	10-14-71	.64
05480660	BOONE R NR KANAWHA, IOWA.	LAT 4255XX, LONG 9353XX, NEAR NORTH 1/4 CORNER SEC.35, T.94 N., R.26 W., HANCOCK COUNTY, AT BRIDGE, 4 MILES SW OF KANAWHA.	71.4	1957-	10-13-71	.34
05480700	BOONE R NR RENWICK, IOWA.	LAT 4253XX, LONG 9355XX, IN SW 1/4 SEC. 3, T.93 N., R.26 W., WRIGHT COUNTY, AT BRIDGE, 6 MILES NE OF REWICK.	134	1957-	10-13-71	1.2
05480720	PRAIRIE CR NR LUVERNE, IOWA.	LAT 4257XX, LONG 9405XX, IN SW 1/4 SEC. 18, T.94 N., R.27 W., KOSSUTH COUNTY, AT BRIDGE, 3 MILES NORTH OF LUVERNE.	69.6	1957-	10-15-71	1.2

DISCHARGE MEASUREMENTS MADE AT LOW-FLOW PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	MEASUREMENTS DATE	MEASUREMENTS DISCHARGE (CFS)
		DES MOINES RIVER BASIN--CONTINUED				
05480760	PRAIRIE CR NR RENWICK, IOWA.	LAT 4252XX, LONG 9359XX, IN NE 1/4 SEC. 23, T.93 N., R.27 W., HUMBOLDT COUNTY, AT BRIDGE, 3 MILES NW OF RENWICK.	118	1957-	10-13-71	.62
05480800	OTTER CR NR GOLDFIELD, IOWA.	LAT 4247XX, LONG 9353XX, IN NE 1/4 SEC. 15, T.92 N., R.26 W., WRIGHT COUNTY, AT BRIDGE, 4 MILES NE OF GOLDFIELD.	75.5	1957-	10-13-71	.50
05480820	BOONE R NR GOLDFIELD, IOWA.	LAT 4243XX, LONG 9357XX, NEAR CENTER OF SEC.5, T.91 N., R.26 W., WRIGHT COUNTY, AT BRIDGE, 1.5 MILES SW OF GOLDFIELD.	419	1957-	10-13-71	4.0
05480860	EAGLE CR NR EAGLE GROVE, IOWA.	LAT 4242XX, LONG 9349XX, IN SE 1/4 SEC. 8, T.91 N., R.25 W., WRIGHT COUNTY, MILES NE OF EAGLE GROVE.	42.8	1957-	10-13-71	.77
05480900	EAGLE CR NR WOOLSTOCK, IOWA.	LAT 4234XX, LONG 9351XX, NEAR CENTER OF SEC.36, T.90 N., R.26 W., WRIGHT COUNTY, AT BRIDGE, 0.5 MILE WEST OF WOOLSTOCK.	105	1957-	10-14-71	2.0
05480940	WHITE FOX CR NR WOOLSTOCK, IOWA.	LAT 4236XX, LONG 9345XX, IN SW 1/4 SEC. 13, T.90 N., R.25 W., WRIGHT COUNTY, AT BRIDGE, 5 MILES NE OF WOOLSTOCK.	42.0	1957-	10-14-71	2.0
05480980	WHITE FOX CR AT WEBSTER CITY, IOWA.	LAT 4230XX, LONG 9348XX, IN NW 1/4 SEC. 28, T.89 N., R.25 W., HAMILTON COUNTY, AT BRIDGE, 2 MILES NORTH OF WEBSTER CITY.	111	1957-	10-14-71	2.7
		LITTLE SIOUX RIVER BASIN				
06604300	OKOBOJI LAKE OUTLET AT ARNOLDS PARK, IOWA.	LAT 4322XX, LONG 9508XX, IN NE 1/4 SEC. 23, T.99 N., R.36 W., DICKINSON COUNTY, AT BRIDGE IN ARNOLDS PARK.	125	1958-71.	--	--
		BOYER RIVER BASIN				
06609600	WILLOW CR NR LOGAN, IOWA.	LAT 4138XX, LONG 9553XX, IN NE 1/4 SEC. 30, T.79 N., R.43 W., HARRISON COUNTY, AT BRIDGE, 5 MILES WEST OF LOGAN.	129	1957-71.	--	--
06609620	WILLOW CR NR MISSOURI VALLEY, IOWA.	LAT 4131XX, LONG 9554XX, IN SE 1/4 SEC. 28, T.78 N., R.44 W., HARRISON COUNTY, AT BRIDGE, 2 MILES SOUTH OF MISSOURI VALLEY.	146	1957-71.[a]	--	--
		NISHNABOTNA RIVER BASIN				
06807550	W NISHNABOTNA R NR MALVERN, IOWA.	LAT 405730, LONG 953322, IN NW 1/4 SEC. 15, T.71 N., R.41 W., MILLS COUNTY, AT BRIDGE, 3.5 MILES SE OF MALVERN.	974	1957-71.	--	--

[a] Discontinued as a low-flow partial-record station; established as a continuous-record station 10-1-72 as "near Logan".

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent water years up to the current year for which the annual maximum has been determined.

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	GAGE HEIGHT (FEET)	DIS-CHARGE (CFS)
		UPPER IOWA RIVER BASIN					
05388310	WATERLOO CR NR DORCHESTER, IOWA.	LAT 4327XX, LONG 9130XX, IN NW 1/4 SEC. 25, T.100 N., R.6 W., ALLAMAKEE COUNTY, ON STATE HIGHWAY 76, 1.4 MILES SOUTH OF DORCHESTER.	23.6	1966-	09-25-72	98.06	(*)
		WEXFORD CREEK BASIN					
05388400	WEXFORD CR NR HARPERS FERRY, IOWA.	LAT 4316XX, LONG 9108XX, IN SE 1/4 SEC. 23, T.96 N., R.3 W., ALLAMAKEE COUNTY, AT BRIDGE, 5 MILES NORTH OF HARPERS FERRY.	11.4	1953-	03-14-72	5.09	(*)
		PAINT CREEK BASIN					
05388600	PAINT CR NR WATERVILLE, IOWA.	LAT 4311XX, LONG 9116XX, NEAR CENTER SEC.36, T.97 N., R.4 W., ALLAMAKEE COUNTY, AT BRIDGE, 3 MILES SOUTHEAST OF WATERVILLE.	56.0	1953-	03-14-72	9.12	1,500
05388700	LITTLE PAINT CR TR NR WATERVILLE.	LAT 4314XX, LONG 9115XX, IN SE 1/4 SEC. 1, T.97 N., R.4 W., ALLAMAKEE COUNTY, AT CULVERT, 3.5 MILES NORTHEAST OF WATERVILLE.	1.09	1953-		A	(*)
		TURKEY RIVER BASIN					
05411530	NB TURKEY R NR CRESCO, IOWA.	LAT 4322XX, LONG 9213XX, IN NW 1/4 SEC. 25, T.99 N., R.12 W., HOWARD COUNTY, AT BRIDGE ON STATE HIGHWAY 9, ABOUT 5 MILES WEST OF CRESCO.	19.3	1966-	07-12-72	91.47	2,200
05411650	CRANE CR TR NR SARATOGA, IOWA.	LAT 4322XX, LONG 9223XX, NEAR SOUTHEAST CORNER OF SEC.21, T.99 N., R.13 W., HOWARD COUNTY, AT BRIDGE ON STATE HWY 9, 1 MILE EAST OF SARATOGA.	4.66	1953-	07-12-72	4.01	1,220
05411700*	CRANE CR NR LOURDES, IOWA.	LAT 4315XX, LONG 9219XX, IN NW 1/4 SEC. 6, T.97 N., R.12 W., HOWARD COUNTY, AT BRIDGE ON STATE HIGHWAY 272, 1 MILE SW OF LOURDES.	75.9	1951-	07-12-72	11.36	3,500

LITTLE MAQUOKETA RIVER BASIN

05414350	LITTLE MAQUOKETA R NEAR GRAF, IOWA.	LAT 4230XX, LONG 9052XX, IN SE 1/4 SEC. 20, T.89 N., R.1 E., DUBUQUE COUNTY, AT BRIDGE, 300 FEET DOWNSTREAM FROM ILLINOIS CENTRAL RR BRIDGE, 0.5 MILE NE OF GRAF.	39.6	1951-	08-02-72	14.59	6,100
05414400	MF LITTLE MAQUOKETA R NEAR RICKARDSVILLE, IOWA.	LAT 423336, LONG 905135, IN SE 1/4 SEC. 32, T.90 N., R.1 E., DUBUQUE COUNTY, AT BRIDGE, 2 MILES SOUTHEAST OF RICKARDSVILLE.	30.2	1951-	07-08-51	22.46	8,160
					10-07-51	18.16	2,150
					02-20-53	17.75	1,900
					05-31-54	17.87	2,000
					02-20-55	15.36	760
					11-13-56	14.94	640
					08-30-57	14.94	640
					08-20-58	14.56	540
					04-01-59	16.89	1,400
					01-12-60	19.04	2,900
					02-18-61	16.07	1,020
					10-30-61	19.13	3,000
					03-18-63	16.64	1,300
					05-24-64	14.23	480
					09-21-65	15.46	820
					02-08-66	15.53	820
					09-14-67	14.26	480
					08-08-68	16.30	1,120
					07-18-69	21.02	5,400
					03-03-70	15.12	690
					02-26-71	15.76	890
					08-02-72	27.7	23,000
05414450*	NF LITTLE MAQUOKETA NEAR RICKARDSVILLE, IOWA.	LAT 423509, LONG 905120, NEAR NW CORNER SEC. 25, T.90 N., R.1 E., DUBUQUE COUNTY, AT BRIDGE, 1 MILE NE OF RICKARDSVILLE.	21.6	1951-	08-02-72	14.02	7,160
05414600	LITTLE MAQUOKETA R TR AT DUBUQUE, IOWA.	LAT 423233, LONG 904138, NEAR NW CORNER SEC.11, T.89 N., R.2 E., DUBUQUE COUNTY, AT BRIDGE ON STATE HIGHWAY 386 NR NORTH CITY LIMITS OF DUBUQUE.	1.54	1951-	01-24-67	11.05	150
					08-08-68	11.49	215
					06-25-69	12.80	445
					07-30-70	12.48	375
					11-01-71	15.31	1,250

MAQUOKETA RIVER BASIN

05417330	PLUM CR AT EARLVILLE, IOWA.	LAT 422313, LONG 911453, IN NE 1/4 SEC. 1, T.88 N., R.4 W., DELAWARE COUNTY, AT BRIDGE ON U.S. HIGHWAY 20, 1.5 MILES SOUTHEAST OF EARLVILLE.	41.1	1966-	03-24-66	85.92	1,030
					1967	A	700
					1968	A	700
					07-18-69	84.71	1,200
					02-02-70	83.82	940
					06-24-71	84.90	1,270
					09-13-72	88.34	3,200
05417590	KITTY CR NR LANGWORTHY, IOWA.	LAT 4212XX, LONG 9112XX, IN NW 1/4 SEC. 4, T.85 N., R.3 W., JONES COUNTY, AT BRIDGE ON U.S. HIGHWAY 151, ABOUT 1 MILE NE OF LANGWORTHY.	14.[illegible]	1966-	04-16-72	86.90	960

WAPSIPINICON RIVER BASIN

05420600	LITTLE WAPSIPINICON TR NR RICEVILLE, IOWA.	LAT 4321XX, LONG 9224XX, NEAR S 1/4 CORNER SEC.27, T.99 N., R.14 W., HOWARD COUNTY, AT CULVERT, 3.5 MILES EAST OF RICEVILLE.	0.90	1953-	09-12-72	4.64	290
05420620	LITTLE WAPSIPINICON R NR ACME, IOWA.	LAT 4320XX, LONG 9224XX, AT N 1/4 CORNER SEC. 10, T.98 N., R.14 W., HOWARD COUNTY, AT BRIDGE ON CO. ROAD W, 1 MILE NORTH OF ACME.	7.76	1953-	09-12-72	3.44	395
05420640*	LITTLE WAPSIPINICON R AT ELMA, IOWA.	LAT 4314XX, LONG 9227XX, IN NW 1/4 SEC. 12, T.97 N., R.14 W., HOWARD COUNTY, AT BRIDGE ON COUNTY ROAD A, NEAR WEST CITY LIMITS OF ELMA.	37.3	1953-	07-12-72	9.23	1,350
05420660	LITTLE WAPSIPINICON R NR NEW HAMPTON, IOWA.	LAT 4304XX, LONG 9224XX, IN NW 1/4 SEC. 4, T.95 N., R.13 W., CHICKASAW COUNTY AT BRIDGE ON U.S. HIGHWAY 18, 4 MILES WEST OF NEW HAMPTON.	95.0	1966-	07-12-72	86.61	1,600
05420680	EB WAPSIPINICON R NR NEW HAMPTON, IOWA.	LAT 4305XX, LONG 9210XX, IN SE 1/4 SEC. 31, T.96 N., R.12 W., CHICKASAW CO. AT BRIDGE ON U.S. HIGHWAY 63, 2 MILES NORTH OF NEW HAMPTON.	30.4	1966-	07-12-72	85.76	3,700

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	 GAGE HEIGHT (FEET)	 DIS-CHARGE (CFS)
		WAPSIPINICON RIVER BASIN--CONTINUED					
05420850	LITTLE WAPSIPINICON R NR ORAN, IOWA.	LAT 4243XX, LONG 9202XX, IN NE 1/4 SEC. 8, T.91 N., R.10 W., FAYETTE COUNTY, AT BRIDGE ON STATE HIGHWAY 3, 2 MILES NE OF ORAN.	94.1	1966-		A	(*)
05420855	BUCK CR NR ORAN, IOWA.	LAT 424253, LONG 920733, IN NE 1/4 SEC. 10, T.91 N., R.11 W., BREMER COUNTY, AT BRIDGE ON STATE HIGHWAY 3, 2.5 MILES NW OF ORAN.	37.4	1966-		A	(*)
05421100	PINE CR TR NR WINTHROP, IOWA.	LAT 4229XX, LONG 9147XX, IN SW 1/4 SEC. 27, T.89 N., R.8 W., BUCHANAN COUNTY, AT CULVERT, 1.4 MILES NORTH OF U.S. HIGHWAY 20 AND 2.5 MILES NW OF WINTHROP.	0.334	1953-		A	(*)
05421200	PINE CR NR WINTHROP, IOWA.	LAT 4228XX, LONG 9147XX, IN SW 1/4 SEC. 34, T.89 N., R.8 W., BUCHANAN COUNTY, AT RR BRIDGE, 500 FT UPSTREAM FROM U.S. HIGHWAY 20 AND 2.5 MILES NW OF WINTHROP.	26.3	1950-		A	(*)
05421300	PINE CR TR NO. 2 AT WINTHROP, IOWA.	LAT 4226XX, LONG 9144XX, AT N 1/4 CORNER SEC. 2, T.88 N., R.8 W., BUCHANAN COUNTY, AT CULVERT ON U.S. HIGHWAY 20 NEAR WEST CITY LIMITS OF WINTHROP.	0.70	1953-		A	(*)
05421550*	BUFFALO CR ABOVE WINTHROP, IOWA.	LAT 4230XX, LONG 9144XX, NEAR NE CORNER SEC. 29, T.89 N., R. 8 W., BUCHANAN COUNTY, AT BRIDGE, 1.5 MILES NE OF WINTHROP.	66.2	1957-		A	(*)
05421600	BUFFALO CR NR WINTHROP, IOWA.	LAT 4228XX, LONG 9143XX, IN NE 1/4 SEC. 1, T.88 N., R.8 W., BUCHANAN COUNTY, AT BRIDGE ON U.S. HIGHWAY 20, 1 MILE EAST OF WINTHROP.	71.4	1953-		A	(*)
05421890	SILVER CR AT WELTON, IOWA.	LAT 4155XX, LONG 9036XX, IN NW 1/4 SEC. 15, T.82 N., R.3 E., CLINTON COUNTY, AT BRIDGE ON U.S. HIGHWAY 61 AT NORTH EDGE OF WELTON.	7.03	1966-	03-16-72	86.60	(*)
		IOWA RIVER BASIN					
05448400*	WESTMAIN DRAINAGE DITCH 1 & 2 NR BRITT, IOWA.	LAT 4306XX, LONG 9347XX, IN SW 1/4 SEC. 27, T.96 N., R.25 W., HANCOCK COUNTY, AT BRIDGE ON U.S. HIGHWAY 18 NEAR EAST CITY LIMITS OF BRITT.	21.2	1966-	06-09-72	83.05	(*)
05448600	EB IOWA R ABOVE HAYFIELD, IOWA.	LAT 4309XX, LONG 9341XX, NEAR S 1/4 CORNER SEC. 4, T.96 N., R.24 W., HANCOCK COUNTY, AT BRIDGE, 1.5 MILES SE OF HAYFIELD.	2.23	1953-	06-09-72	5.90	140
05448700	EB IOWA R NR HAYFIELD, IOWA.	LAT 4311XX, LONG 9339XX, IN NW 1/4 SEC. 35, T.97 N., R.24 W., HANCOCK COUNTY, AT BRIDGE, 2 MILES EAST OF HAYFIELD.	7.94	1952-	06-09-72	10.97	260
05448800	EB IOWA R NR GARNER, IOWA.	LAT 4306XX, LONG 9337XX, NEAR CENTER SEC. 25, T.96 N., R.24 W., HANCOCK COUNTY, AT BRIDGE ON U.S. HIGHWAY 18, 1.2 MILES WEST OF GARNER.	45.1	1952-	06-09-72	10.94	730
05448900	EB IOWA R TR NR GARNER, IOWA.	LAT 4306XX, LONG 9340XX, NEAR CENTER SEC. 27, T.96 N., R.24 W., HANCOCK COUNTY, AT CULVERT ON U.S. HWY 18, 2.1 MILES WEST OF GARNER.	3.95	1952-	06-09-72	6.26	105
05451950	EB SALT CR NR **CLUTIER**, IOWA. **(Discontinued)**	LAT 420646, LONG 922017, IN NE 1/4 SEC. 22, T.84 N., R.13 W., TAMA COUNTY, AT BRIDGE ON STATE HIGHWAY 316, 3 MILES EAST OF CLUTIER.	20.4	1966-71.		A	(*)

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM		
					DATE	GAGE HEIGHT (FEET)	DIS-CHARGE (CFS)
		ICWA RIVER BASIN--CONTINUED					
05451955	STEIN CR NR CLUTIER, IOWA.	LAT 420446, LONG 921800, IN NE 1/4 SEC. 24, T.84 N., R.13 W., TAMA COUNTY, AT BRIDGE ON STATE HIGHWAY 318, 5 MILES EAST OF CLUTIER.	23.4	1971-	03-01-72	71.99	141
05453200	PRICE CR AT AMANA, IOWA.	LAT 4148XX, LONG 9153XX, IN SE 1/4 SEC. 22, T.81 N., R.9 W., IOWA COUNTY, AT BRIDGE ON STATE HIGHWAY 149, NEAR NORTH EDGE OF AMANA.	29.1	1966-		A	<1,520
05453600	RAPID CR BELOW MORSE, IOWA.	LAT 414345, LONG 912538, NEAR NE CORNER SEC. 21, T.80 N., R.5 W., JOHNSON COUNTY, AT BRIDGE, 1.5 MILES SE OF MORSE.	8.12	1951-	07-17-72	25.66	2,800
05453700	RAPID CR TR NO. 4 NR OASIS, IOWA.	LAT 414253, LONG 912452, NEAR S 1/4 CORNER SEC. 22, T.80 N., R.5 W., JOHNSON COUNTY, AT CULVERT, 2 MILES NW OF OASIS.	1.95	1951-	07-17-72	18.45	950
05453750	RAPID CR SW OF MORSE, IOWA.	LAT 414323, LONG 912616, IN W 1/2 SEC. 21, T.80 N., R.5 W., JOHNSON COUNTY, AT BRIDGE, 2 MILES SOUTHWEST OF MORSE.	15.2	1951-	07-17-72	29.74	4,300
05453850	RAPID CR TR NO. 3 NR OASIS, IOWA.	LAT 414233, LONG 912714, NEAR CENTER OF SEC. 29, T.80 N., R.5 W., JOHNSON COUNTY, AT BRIDGE, 3.5 MILES WEST OF OASIS.	1.62	1951-	07-17-72	24.11	950
05453900	RAPID CR TR NR OASIS, IOWA.	LAT 414114, LONG 912637, NEAR SW CORNER SEC. 33, T.80 N., R.5 W., JOHNSON COUNTY, AT BRIDGE, 3 MILES SW OF OASIS.	.97	1951-	07-17-72	16.59	610
05453950	RAPID CR TR NR IOWA CITY, IOWA.	LAT 414156, LONG 912839, IN NW 1/4 SEC. 31, T.80 N., R.5 W., JOHNSON COUNTY, AT BRIDGE, 4 MILES NE OF IOWA CITY.	3.43	1951-	07-17-72	26.57	2,300
05455100*	OLD MANS CR NR IOWA CITY, IOWA.	LAT 413623, LONG 913656, IN NW 1/4 SEC. 36, T.79 N., R.7 W., JOHNSON COUNTY, AT BRIDGE, 3 MILES SOUTHWEST OF IOWA CITY.	201	1951-	08-06-72	12.98	3,200
05455150	N ENGLISH R NR MONTEZUMA, IOWA.	LAT 4135XX, LONG 9233XX, IN SW 1/4 SEC. 13, T.79 N., R.15 W., POWESHIEK CO., AT BRIDGE ON U.S. HIGHWAY 63, 5 MILES NW OF MONTEZUMA.	34.0	1953-	04-18-72	11.90	2,700
05455200*	N ENGLISH R NR GUERNSEY, IOWA.	LAT 4138XX, LONG 9224XX, NEAR SW CORNER SEC. 17, T.79 N., R.13 W., POWESHIEK COUNTY, AT BRIDGE, 2.2 MILES WEST OF GUERNSEY.	66.7	1953-	08-06-72	8.53	1,930
05455210	N ENGLISH R AT GUERNSEY, IOWA.	LAT 4139XX, LONG 9221XX, IN NW 1/4 SEC. 22, T.79 N., R.13 W., POWESHIEK CO., AT BRIDGE ON STATE HIGHWAY 21, 1 MILE SW OF GUERNSEY.	61.5	1960, 1966-	08-06-72	83.25	4,400
05455230	DEEP R AT DEEP RIVER, IOWA.	LAT 4135XX, LONG 9221XX, IN SW 1/4 SEC. 3, T.78 N., R.13 W., POWESHIEK CO., AT BRIDGE ON STATE HIGHWAY 21, 1 MILE NE OF DEEP RIVER.	30.5	1960, 1966-	08-06-72	60.78	1,220
05455280	S ENGLISH R TR NR BARNES CITY, IOWA.	LAT 4133XX, LONG 9228XX, NEAR NE CORNER SEC. 21, T.78 N., R.14 W., POWESHIEK COUNTY, AT BRIDGE, 3 MILES NORTH OF BARNES CITY.	2.51	1953-	04-18-72	8.67	410
05455300	S ENGLISH R NR BARNES CITY, IOWA.	LAT 4131XX, LONG 9225XX, NEAR NW CORNER SEC. 34, T.78 N., R.14 W., POWESHIEK COUNTY, AT BRIDGE, 1 MILE NORTH OF BARNES CITY.	11.2	1953-	08-06-72	11.76	610

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	GAGE HEIGHT (FEET)	DIS-CHARGE (CFS)
		IOWA RIVER BASIN--CONTINUED					
05455350	S ENGLISH R TR NO.2 NR MONTEZUMA, IOWA.	LAT 4131XX, LONG 9227XX, NEAR SW CORNER SEC. 11, T.78 N., R.14 W., POWESHIEK COUNTY, AT BOX CULVERT, 4 MILES SE OF MONTEZUMA.	0.523	1953-	05-08-72	10.74	210
05455550	BULGERS RUN NR RIVERSIDE, IOWA.	LAT 4129XX, LONG 9136XX, IN SE 1/4 SEC. 11, T.77 N., R.7 W., WASHINGTON CO., AT BRIDGE ON STATE HIGHWAY 22, 2.5 MILES WEST OF RIVERSIDE.	6.31	1965-	09-11-72	88.13	2,350
05457440	DEER CR NR CARPENTER, IOWA.	LAT 4325XX, LONG 9259XX, IN NE 1/4 SEC. 8, T.99 N., R.18 W., MITCHELL COUNTY, AT BRIDGE ON STATE HIGHWAY 105, 1.5 MILES EAST OF CARPENTER.	91.6	1956-		A	(+)
05458560	BEAVERDAM CR NR SHEFFIELD, IOWA.	LAT 4256XX, LONG 9312XX, IN NW 1/4 SEC. 27, T.94 N., R.20 W., CERRO GORDO CO. AT BRIDGE ON U.S. HIGHWAY 65, 3 MILES NORTH OF SHEFFIELD.	123	1966-		A	<300
05459010	ELK CR AT KENSETT, IOWA.	LAT 4322XX, LONG 9313XX, IN NE 1/4 SEC. 28, T.99 N., R.20 W., WORTH COUNTY, AT BRIDGE ON U.S. HIGHWAY 65, 1 MILE NORTH OF KENSETT.	58.1	1966-		A	<800
05459490	SPRING CR NR MASON CITY, IOWA.	LAT 431248, LONG 931238, IN SE 1/4 SEC. 16, T.97 N., R.20 W., CERRO GORDO CO. AT BRIDGE ON U.S. HIGHWAY 65, 4 MILES NORTH OF MASON CITY.	29.3	1966-		A	(+)
05460100	WILLOW CR NR MASON CITY, IOWA.	LAT 4309XX, LONG 9316XX, IN NE 1/4 SEC. 12, T.96 N., R.21 W., CERRO GORDO CO. AT BRIDGE ON U.S. HIGHWAY 18, 3.5 MILES WEST OF MASON CITY.	78.5	1966-		A	(+)
05462750	BEAVER CR TR NR APLINGTON, IOWA.	LAT 4235XX, LONG 9251XX, IN NW 1/4 SEC. 27, T.90 N., R.17 W., BUTLER COUNTY, AT BRIDGE ON U.S. HIGHWAY 20, 2 MILES EAST OF APLINGTON.	11.6	1966-	05-06-72	92.60	360
05463090	BLACK HAWK CR AT GRUNDY CENTER, IOWA.	LAT 4222XX, LONG 9246XX, IN NW 1/4 SEC. 7, T.87 N., R.16 W., GRUNDY COUNTY, AT BRIDGE ON STATE HIGHWAY 14, AT NORTH EDGE OF GRUNDY CENTER.	56.9	1966-	08-06-72	86.71	1,800
05464145	TWELVE MILE CR NR TRAER, IOWA.	LAT 421350, LONG 922756, IN SE 1/4 SEC. 27, T.86 N., R.14 W., TAMA COUNTY, AT BRIDGE ON U.S. HIGHWAY 63, 2.5 MILES NORTH OF TRAER.	43.8	1966-			
05464310	PRATT CR NR GARRISON, IOWA.	LAT 421053, LONG 921110, IN SE 1/4 SEC. 12, T.85 N., R.12 W., BENTON COUNTY, AT BRIDGE ON U.S. HIGHWAY 218, 3.5 MILES NW OF GARRISON.	23.4	1966-		A	(+)
05464318	E BLUE CR AT CENTER POINT, IOWA.	LAT 421244, LONG 914721, IN SW 1/4 SEC. 33, T.86 N., R.8 W., LINN COUNTY, AT BRIDGE ON STATE HIGHWAY 150, 1.5 MILES NORTH OF CENTER POINT.	17.6	1966-		A	<1,540
05464560	PRAIRIE CR AT BLAIRSTOWN, IOWA.	LAT 415442, LONG 920503, IN SW 1/4 SEC. 13, T.82 N., R.11 W., BENTON COUNTY, AT BRIDGE ON STATE HIGHWAY 82, AT NORTH EDGE OF BLAIRSTOWN.	67.0	1966-	06-09-66 03-21-67 08-05-68 07-18-69 03-03-70 05-19-71 02-29-72	82.41 81.32 83.97 84.62 85.05 82.87 82.67B	2,050C 1,450C 3,100C 3,900 4,600 2,300 650
05464980	OTTER CR AT WILTON, IOWA.	LAT 413517, LONG 910208, IN NE 1/4 SEC. 35, T.79 N., R.2 W., CEDAR COUNTY, AT BRIDGE ON STATE HIGHWAY 38, 1.5 MILES NW OF WILTON.	10.7	1966-	07-10-72	84.57	520
05465150	NF LONG CR AT AINSWORTH, IOWA.	LAT 4117XX, LONG 9132XX, IN SW 1/4 SEC. 22, T.75 N., R.6 W., WASHINGTON CO., AT BRIDGE ON U.S. HIGHWAY 218, 1 MILE SE OF AINSWORTH.	30.2	1951, 1965-	05-06-72	87.57	600

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	ANNUAL MAXIMUM GAGE HEIGHT (FEET)	ANNUAL MAXIMUM DISCHARGE (CFS)
		SKUNK RIVER BASIN					
05469860	MUD LAKE DRAINAGE DITCH 71 IN JEWELL, IOWA.	LAT 4219XX, LONG 9333XX, IN SW 1/4 SEC. 27, T.87 N., R.24 W., HAMILTON CO., AT BRIDGE ON U.S. HIGHWAY 69 IN JEWELL.	65.4	1966-	09-07-72	89.02	(+)
05469950	KEIGLEY BR NR STORY CITY, IOWA.	LAT 4209XX, LONG 9337XX, IN NW 1/4 SEC. 25, T.85 N., R.24 W., STORY COUNTY, AT BRIDGE ON U.S. HIGHWAY 69, 3 MILES SOUTH OF STORY CITY.	31.0	1966-	06-06-72	86.35	465
05472090	N SKUNK R NR BAXTER, IOWA.	LAT 4149XX, LONG 9304XX, IN NE 1/4 SEC. 21, T.81 N., R.19 W., JASPER COUNTY, AT BRIDGE ON STATE HIGHWAY 223, 4.5 MILES EAST OF BAXTER.	52.2	1956-	06-13-72	81.79	(+)
05472290	SUGAR CR NR SEARSBORO, IOWA.	LAT 4134XX, LONG 9244XX, IN SE 1/4 SEC. 7, T.78 N., R.16 W., POWESHIEK CO., AT BRIDGE ON STATE HIGHWAY 225, 1.6 MILES WEST OF SEARSBORO.	52.7	1966-	08-06-72	91.28	1,400
05472390	MIDDLE CR NR LACEY, IOWA.	LAT 4125XX, LONG 9239XX, IN NE 1/4 SEC. 1, T.76 N., R.16 W., MAHASKA COUNTY, AT BRIDGE ON U.S. HIGHWAY 63, 1.5 MILES NW OF LACEY.	23.0	1956-	08-06-72	66.78	1,130
05472445	ROCK CR AT SIGOURNEY, IOWA.	LAT 412012, LONG 921320, IN NE 1/4 SEC. 3, T.75 N., R.12 W., KEOKUK COUNTY, AT BRIDGE ON STATE HIGHWAY 92, NEAR WEST EDGE OF SIGOURNEY.	26.3	1966-	05-07-72	86.91	840
05473300*	CEDAR CR NR BATAVIA, IOWA.	LAT 4101XX, LONG 9207XX, IN SW 1/4 SEC. 27, T.72 N., R.11 W., JEFFERSON CO., AT BRIDGE ON U.S. HIGHWAY 34, 2.5 MILES NE OF BATAVIA.	252	1966-		A	(+)
		DES MOINES RIVER BASIN					
05480930	WHITE FOX CR AT CLARION, IOWA.	LAT 4244XX, LONG 9342XX, IN NW 1/4 SEC. 3, T.91 N., R.24 W., WRIGHT COUNTY, AT BRIDGE ON STATE HIGHWAY 3, 1.5 MILES EAST OF CLARION.	13.3	1966-		A	(+)
05481510	BLUFF CR AT PILOT MOUND, IOWA.	LAT 4210XX, LONG 9401XX, IN NW 1/4 SEC. 20, T.85 N., R.27 W., BOONE COUNTY, AT BRIDGE ON STATE HIGHWAY 329, AT NW EDGE OF PILOT MOUND.	23.5	1966-		A	(+)
05481680	BEAVER CR AT BEAVER, IOWA.	LAT 4202XX, LONG 9405XX, IN NE 1/4 SEC. 6, T.83 N., R.28 W., BOONE COUNTY, AT BRIDGE ON U.S. HIGHWAY 30, AT SW EDGE OF BEAVER.	38.5	1966-	08-01-72	88.82	710
05481690	W BEAVER CR AT GRAND JUNCTION, IOWA.	LAT 4202XX, LONG 9413XX, IN NE 1/4 SEC. 3, T.83 N., R.29 W., GREENE COUNTY, AT BRIDGE ON U.S. HIGHWAY 30, NEAR EAST EDGE OF GRAND JUNCTION.	12.0	1966-	08-01-72	66.85	220
05482600	HARDIN CR AT FARNHAMVILLE, IOWA.	LAT 421601, LONG 942510, NEAR NE CORNER SEC. 14, T.86 N., R.31 W., CALHOUN CO., AT BRIDGE ON STATE HIGHWAY 175, NEAR WEST CITY LIMITS OF FARNHAMVILLE.	43.7	1952-	10-31-71	9.09	700
05482800	HAPPY RUN AT CHURDAN, IOWA.	LAT 4210XX, LONG 9430XX, NEAR SW CORNER SEC. 17, T.85 N., R.31 W., GREENE CO. AT BRIDGE NEAR WEST CITY LIMITS OF CHURDAN.	7.58	1952-		A	(+)
05482900	HARDIN CR NR FARLIN, IOWA.	LAT 4206XX, LONG 9426XX, NEAR N 1/4 CORNER SEC. 14, T.84 N., R.31 W., GREENE COUNTY, AT BRIDGE, 1.5 MILES NE OF FARLIN.	101	1951-	05-06-72	9.04	570
05483318	BRUSHY FORK CR NR TEMPLETON, IOWA.	LAT 4157XX, LONG 9453XX, IN NW 1/4 SEC. 1, T.82 N., R.35 W., CARROLL COUNTY, AT BRIDGE ON U.S. HIGHWAY 71, 4 MILES NE OF TEMPLETON.	15.0	1966-	10-30-71	86.48	(+)
05483349	M RACCOON R TR AT CARROLL, IOWA.	LAT 4203XX, LONG 9453XX, IN NW 1/4 SEC. 36, T.84 N., R.35 W., CARROLL COUNTY, AT BRIDGE ON U.S. HIGHWAY 71, 1.5 MILES SOUTH OF CARROLL.	6.58	1966-	09-12-72	87.67	(+)

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	ANNUAL MAXIMUM GAGE HEIGHT (FEET)	ANNUAL MAXIMUM DIS-CHARGE (CFS)
		DES MOINES RIVER BASIN--CONTINUED					
05487300	S OTTER CR BELOW HIGHWAY 34 NR WOODBURN, IOWA.	LAT 4102XX, LONG 9339XX, NEAR SE CORNER SEC. 18, T.72 N., R.24 W., CLARKE CO. AT BRIDGE DOWNSTREAM FROM U.S. HWY 34, 3 MILES NW OF WOODBURN.	2.26	1953-			(+)
05487350	S OTTER CR TR NR WOODBURN, IOWA.	LAT 4103XX, LONG 9336XX, NEAR SW CORNER SEC. 11, T.72 N., R.24 W., CLARKE CO. AT BRIDGE, 2 MILES NORTH OF WOODBURN.	0.71	1955-	10-31-71	9.00	(+)
05487600	S WHITE BREAST CR NR OSCEOLA, IOWA.	LAT 405736, LONG 934128, NEAR SW CORNER SEC. 12, T.71 N., R.25 W., CLARKE COUNTY, AT BRIDGE, 6 MILES SE OF OSCEOLA.	28.0	1953-		A	(+)
05487800*	WHITE BREAST CR AT LUCAS, IOWA.	LAT 4101XX, LONG 9326XX, IN NE 1/4 SEC. 23, T.72 N., R.23 W., LUCAS COUNTY, AT BRIDGE ON U.S. HIGHWAY 65, NEAR SOUTH CITY LIMITS OF LUCAS.	126	1953-	09-11-72	16.58	9,480
05488620	COAL CR NR ALBIA, IOWA.	LAT 4101XX, LONG 9251XX, IN SW 1/4 SEC. 20, T.72 N., R.17 W., MONROE COUNTY, AT BRIDGE ON U.S. HIGHWAY 34, 2 MILES SW OF ALBIA.	13.5	1966-		A	(+)
05489150	L MUCHAKINOCK CR AT OSKALOOSA, IOWA.	LAT 4116XX, LONG 9238XX, IN SE 1/4 SEC. 23, T.75 N., R.16 W., MAHASKA COUNTY, AT BRIDGE ON STATE HIGHWAY 137, AT SOUTH EDGE OF OSKALOOSA.	9.12	1966-		A	(+)
05489350	S AVERY CR NR BLAKESBURG, IOWA.	LAT 4101XX, LONG 9237XX, IN SE 1/4 SEC. 19, T.72 N., R.15 W., WAPELLO COUNTY, AT BRIDGE ON U.S. HIGHWAY 34, 3.5 MILES NORTH OF BLAKESBURG.	33.1	1965-	05-08-72	65.03	(+)
05489490	BEAR CR AT OTTUMWA, IOWA.	LAT 410043, LONG 922754, IN NW 1/4 SEC. 27, T.72 N., R.14 W., WAPELLO COUNTY, AT BRIDGE ON U.S. HIGHWAY 34, NEAR WEST EDGE OF OTTUMWA.	22.9	1965-	05-08-72	66.21	1,400
		FOX RIVER BASIN					
05494100	S FOX CR TR NR WEST GROVE, IOWA.	LAT 4044XX, LONG 9238XX, NEAR S 1/4 CORNER SEC. 31, T.69 N., R.15 W., DAVIS CO., AT CULVERT ON STATE HIGHWAY 2, 3.5 MILES WEST OF WEST GROVE.	0.55	1953-	04-21-72	2.70	(+)
05494110	S FOX CR NR WEST GROVE, IOWA.	LAT 4044XX, LONG 9236XX, IN SE 1/4 SEC. 32, T.69 N., R.15 W., DAVIS COUNTY, AT BRIDGE ON STATE HIGHWAY 2, 2.4 MILES WEST OF WEST GROVE.	12.2	1965-		A	(+)
		WYACONDA RIVER BASIN					
05495500	S WYACONDA R NR WEST GROVE, IOWA.	LAT 4043XX, LONG 9230XX, NEAR NW CORNER SEC. 5, T.68 N., R.14 W., DAVIS CO., AT BRIDGE, 2.5 MILES EAST OF WEST GROVE.	4.69	1953-		A	(+)
		BIG SIOUX RIVER BASIN					
06483410	OTTER CR NORTH OF SIBLEY, IOWA.	LAT 4326XX, LONG 9544XX, AT NE CORNER SEC. 25, T.100 N., R.42 W., OSCEOLA CO., AT BRIDGE ON COUNTY ROAD H, 4 MILES NORTH OF SIBLEY.	11.9	1952-		A	<68
06483420	SCHUTTE CR NR SIBLEY, IOWA.	LAT 4326XX, LONG 9547XX, NEAR NW CORNER SEC. 23, T.100 N., R.42 W., OSCEOLA COUNTY, AT CULVERT, 6 MILES NW OF SIBLEY.	1.43	1952-		A	<15
06483430	OTTER CR AT SIBLEY, IOWA.	LAT 4324XX, LONG 9546XX, NEAR N 1/4 CORNER SEC. 14, T.99 N., R.42 W., OSCEOLA CO., AT BRIDGE, 1 MILE NW OF SIBLEY.	29.9	1952-	05-01-72	5.33	76
06483440	DAWSON CR NR SIBLEY, IOWA.	LAT 4323XX, LONG 9543XX, NEAR NW CORNER SEC. 20, T.99 N., R.41 W., OSCEOLA CO., AT CULVERT ON COUNTY ROAD D, 2 MILES SE OF SIBLEY.	4.35	1952-	06-07-72	3.74	38

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	ANNUAL MAXIMUM GAGE HEIGHT (FEET)	ANNUAL MAXIMUM DISCHARGE (CFS)
		BIG SIOUX RIVER BASIN--CONTINUED					
06483450	WAGNER CR NR ASHTON, IOWA.	LAT 4321XX, LONG 9546XX, ON SOUTH LINE SEC. 35, T.99 N., R.42 W., OSCEOLA COUNTY, AT BRIDGE, 3 MILES NE OF ASHTON.	7.09	1952-	06-07-72	2.63	(+)
06483460*	OTTER CR NR ASHTON, IOWA.	LAT 4320XX, LONG 9546XX, IN SE 1/4 SEC. 2, T.98 N., R.42 W., OSCEOLA COUNTY, AT BRIDGE, 2 MILES NORTHEAST OF ASHTON.	88.0	1952-	05-01-72	6.49	280
06483495	BURR OAK CR NR PERKINS, IOWA.	LAT 431443, LONG 961038, IN SE 1/4 SEC. 5, T.97 N., R.45 W., SIOUX CO., AT BRIDGE ON U.S. HIGHWAY 75, 4 MILES NORTH OF PERKINS.	30.9	1966-	06-07-72	87.19	(+)
		PERRY CREEK BASIN					
06599800	PERRY CR NR MERRILL, IOWA.	LAT 424316, LONG 962033, IN NW 1/4 SEC. 12, T.91 N., R.47 W., PLYMOUTH CO., AT BRIDGE ON COUNTY ROAD M, 5 MILES WEST OF MERRILL.	6.17	1953-	07-20-72	8.92	950
06599950	PERRY CR NR HINTON, IOWA.	LAT 423757, LONG 962213, NEAR W 1/4 CORNER SEC. 11, T.90 N., R.47 W., PLYMOUTH CO., AT BRIDGE ON STATE HWY M, 4 MILES WEST OF HINTON.	30.8	1953-		A	(+)
		FLOYD RIVER BASIN					
06600030	L FLOYD R NR SANBORN, IOWA.	LAT 431110, LONG 954330, IN NE 1/4 SEC. 31, T.97 N., R.41 W., O BRIEN CO., AT BRIDGE ON U.S. HIGHWAY 18, 3.5 MILES WEST OF SANBORN.	8.44	1966-	03-11-72	87.42 B	(+)
06600080	WILLOW CR AT HOSPERS, IOWA.	LAT 430438, LONG 955416, IN NE 1/4 SEC. 3, T.95 N., R.43 W., SIOUX CO., AT BRIDGE ON STATE HIGHWAY 60, AT NORTH EDGE OF HOSPERS.	37.9	1966-	06-07-72	88.90	395
		MONONA-HARRISON DITCH BASIN					
06601480	BIG WHISKEY SLOUGH NR REMSEN, IOWA.	LAT 4246XX, LONG 9553XX, IN NW 1/4 SEC. 11, T.92 N., R.43 W., PLYMOUTH CO., AT BRIDGE ON STATE HIGHWAY 3, 4.2 MILES EAST OF REMSEN.	12.9	1966-		A	(+)
06602190	ELLIOT CR AT LAWTON, IOWA.	LAT 422630, LONG 961122, IN NW 1/4 SEC. 3, T.88 N., R.46 W., WOODBURY CO., AT BRIDGE ON U.S. HIGHWAY 20, AT WEST EDGE OF LAWTON.	34.8	1966-	07-17-72	85.09	2,810
06602240	BIG WHISKEY CR NR LAWTON, IOWA.	LAT 422630, LONG 961501, IN NW 1/4 SEC. 5, T.88 N., R.46 W., WOODBURY CO., AT BRIDGE ON U.S. HIGHWAY 20, 3.5 MILES WEST OF LAWTON.	51.3	1966-	07-17-72	77.11	(+)
		LITTLE SIOUX RIVER BASIN					
06604310	OCHEYEDAN R NR OCHEYEDAN, IOWA.	LAT 4325XX, LONG 9537XX, IN NE 1/4 SEC. 6, T.99 N., R.40 W., OSCEOLA CO., AT BRIDGE ON STATE HIGHWAY 9, 4 MILES NW OF OCHEYEDAN.	73.5	1966-		A	(+)
06605340	PRAIRIE CR NR SPENCER, IOWA.	LAT 430516, LONG 950540, IN SE 1/4 SEC. 35, T.96 N., R.37 W., CLAY COUNTY, AT BRIDGE ON U.S. HIGHWAY 71, 4 MILES SOUTH OF SPENCER.	22.3	1966-	06-27-72	88.13	225
06605750	WILLOW CR NR CORNELL, IOWA.	LAT 4243XX, LONG 9510XX, IN SE 1/4 SEC. 12, T.94 N., R.37 W., CLAY COUNTY, AT BRIDGE ON U.S. HIGHWAY 71, 2 MILES NW OF CORNELL.	78.6	1966-	06-27-72	87.08	590
06604590	WATERMAN CR AT HARTLEY, IOWA.	LAT 431106, LONG 953043, IN NE 1/4 SEC. 36, T.97 N., R.40 W., O BRIEN CO., AT BRIDGE ON U.S. HIGHWAY 18, 1.8 MILES WEST OF HARTLEY.	26.7	1966-	05-01-72	86.03	(+)
06605790	MAPLE CR NR ALTA, IOWA.	LAT 4245XX, LONG 9522XX, IN NE 1/4 SEC. 31, T.92 N., R.38 W., BUENA VISTA CO. AT BRIDGE ON STATE HIGHWAY 3, 6 MILES NW OF ALTA.	15.5	1966-	05-01-72	85.35	(+)
06607157	WILSEY CR AT MAPLETON, IOWA.	LAT 4210XX, LONG 9545XX, IN SE 1/4 SEC. 14, T.85 N., R.43 W., MONONA CO., AT BRIDGE ON STATE HIGHWAY 141, 1.2 MILES NW OF MAPLETON.	18.4	1966-		A	(+)

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	 GAGE HEIGHT (FEET)	 DISCHARGE (CFS)
		SOLDIER RIVER BASIN					
06608450	JORDAN CR AT MOORHEAD, IOWA.	LAT 4155XX, LONG 9552XX, IN NW 1/4 SEC. 15, T.82 N., R.43 W., MONONA CO., AT BRIDGE ON STATE HIGHWAY 183, AT SW CORNER OF MOORHEAD.	30.1	1966-		A	(+)
		BOYER RIVER BASIN					
06609560	WILLOW CR NR SOLDIER, IOWA.	LAT 4155XX, LONG 9542XX, IN NW 1/4 SEC. 14, T.82 N., R.42 W., MONONA CO., AT BRIDGE ON STATE HIGHWAY 37, 6 MILES SE OF SOLDIER.	29.1	1966-		A	(+)
		MOSQUITO CREEK BASIN					
06610510	MOSER CR NR EARLING, IOWA.	LAT 4147XX, LONG 9527XX, IN NE 1/4 SEC. 1, T.80 N., R.40 W., SHELBY CO., AT BRIDGE ON STATE HIGHWAY 37, 1.5 MILES WEST OF EARLING.	21.6	1966-	09-11-72	87.02	8,800
06610600*	MOSQUITO CR AT NEOLA, IOWA.	LAT 412709, LONG 953637, IN NE 1/4 SEC. 19, T.77 N., R.42 W., POTTAWATTAMIE CO., AT BRIDGE ON COUNTY ROAD S, 0.5 MILE SOUTH OF NEOLA.	131	1966-	09-11-72	31.23	(+)
		NISHNABOTNA RIVER BASIN					
06807418	GRAYBILL CR NR CARSON, IOWA.	LAT 4114XX, LONG 9523XX, IN NW 1/4 SEC. 7, T.74 N., R.39 W., POTTAWATTAMIE CO., AT BRIDGE ON STATE HIGHWAY 92, 2 MILES EAST OF CARSON.	45.9	1966-		A	(+)
06807470	INDIAN CR NR EMERSON, IOWA.	LAT 4102XX, LONG 9523XX, IN NW 1/4 SEC. 19, T.72 N., R.39 W., MONTGOMERY CO., AT BRIDGE ON U.S. HIGHWAY 34, 1 MILE EAST OF EMERSON.	37.3	1966-	09-12-72	87.17	630
06807720	M SILVER CR NR AVOCA, IOWA.	LAT 412633, LONG 952806, NEAR N 1/4 CORNER SEC. 17, T.77 N., R.40 W., POTTAWATTAMIE CO., AT BRIDGE ON STATE HIGHWAY 83, 7 MILES SOUTH OF AVOCA.	3.21	1955-	09-11-72	A	(+)
06807760	M SILVER CR NR OAKLAND, IOWA.	LAT 411928, LONG 953319, NEAR E 1/4 CORNER SEC. 4, T.75 N., R.41 W., POTTAWATTAMIE CO., AT BRIDGE, 8.5 MILES NW OF OAKLAND.	25.7	1953-		8.23	790
06807780	M SILVER CR AT TREYNOR, IOWA.	LAT 411437, LONG 953653, NEAR NE CORNER SEC. 1, T.74 N., R.42 W., POTTAWATTAMIE CO., AT BRIDGE ON COUNTY ROAD F, 1 MILE NORTH OF TREYNOR.	42.7	1953-	09-11-72	5.59	600
06808880	BLUEGRASS CR AT AUDUBON, IOWA.	LAT 4143XX, LONG 9456XX, IN NW 1/4 SEC. 28, T.80 N., R.35 W., AUDUBON CO., AT BRIDGE ON U.S. HIGHWAY 71, NEAR SOUTH EDGE OF AUDUBON.	15.4	1966-	09-11-72	86.05	(+)
		TARKIO RIVER BASIN					
06811760	TARKIO R NR ELLIOT, IOWA.	LAT 4106XX, LONG 9506XX, NEAR NE CORNER SEC. 28, T.73 N., R.37 W., MONTGOMERY COUNTY, AT BRIDGE, 4.5 MILES SE OF ELLIOT.	10.7	1952-	09-11-72	10.21	870
06811800	E TARKIO CR NR STANTON, IOWA.	LAT 4105XX, LONG 9506XX, IN W 1/2 SEC. 34, T.73 N., R.37 W., MONTGOMERY CO., AT BRIDGE, 7 MILES NORTH OF STANTON.	4.66	1952-	09-11-72	11.03	1,300
06811820	TARKIO R TR NR STANTON, IOWA.	LAT 4103XX, LONG 9506XX, NEAR NE CORNER SEC. 16, T.72 N., R.37 W., MONTGOMERY COUNTY, AT BOX CULVERT, 4 MILES NORTH OF STANTON.	0.67	1952-	09-11-72	2.64	84
06811875	SNAKE CR NR YORKTOWN, IOWA.	LAT 4045XX, LONG 9508XX, IN NW 1/4 SEC. 32, T.69 N., R.37 W., PAGE COUNTY, AT BRIDGE ON STATE HIGHWAY 2, 1.5 MILES NE OF YORKTOWN.	9.10	1966-		A	(+)

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1972--CONTINUED

STATION NO.	STATION NAME	LOCATION	DRAINAGE AREA (SQ MI)	PERIOD OF RECORD	ANNUAL MAXIMUM DATE	ANNUAL MAXIMUM GAGE HEIGHT (FEET)	ANNUAL MAXIMUM DIS- CHARGE (CFS)
		NODAWAY RIVER BASIN					
06810290	W NODAWAY R AT MASSENA, IOWA.	LAT 4115XX, LONG 9445XX, IN SE 1/4 SEC. 33, T.75 N., R.34 W., CASS COUNTY, AT BRIDGE ON STATE HIGHWAY 148, AT SE CORNER OF MASSENA.	23.4	1966-		A	(+)
		PLATTE RIVER BASIN					
06816558	PLATTE R NR STRINGTOWN, IOWA.	LAT 4059XX, LONG 9430XX, IN SE 1/4 SEC. 2, T.71 N., R.32 W., ADAMS COUNTY, AT BRIDGE ON U.S. HIGHWAY 34, 3.6 MILES EAST OF STRINGTOWN.	51.7	1966-		A	(+)
06819110	MB 102 R NR GRAVITY, IOWA.	LAT 4050XX, LONG 9444XX, IN SE 1/4 SEC. 27, T.70 N., R.35 W., TAYLOR COUNTY, AT BRIDGE ON STATE HIGHWAY 148, 4.8 MILES NORTH OF GRAVITY.	33.5	1966-		A	(+)
		CHARITON RIVER BASIN					
06903990	COOPER CR AT CENTERVILLE, IOWA.	LAT 404502, LONG 925136, IN NW 1/4 SEC. 30, T.69 N., R.17 W., APPANOOSE CO., AT BRIDGE ON STATE HIGHWAY 5, AT NORTH EDGE OF CENTERVILLE.	47.6	1966-		A	(+)

* Also a low-flow partial-record station
+ Discharge not determined
A Peak stage did not reach bottom of gage
B Ice affected
C Revised

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Measurements of peak flow are designated by a dagger (+).

Discharge measurements made at miscellaneous sites during water year 1972

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Upper Iowa River basin				
Upper Iowa River	Mississippi River	NW1/4 sec.1, T.99 N., R.6 W., at bridge on State Highway 76, 0.2 mile above Bear Creek, and 3.5 miles south of Dorchester, Iowa.	770	1937-71	10-12-71 11-16-71 3-21-72 5- 2-72 6-14-72 7-25-72 9- 6-72 9-26-72	163 203 960 490 248 797 252 6,490
Bear Creek	Upper Iowa River	NE1/4 sec.2, T.99 N., R.6 W., at bridge on State Highway 76, 3 miles south of Dorchester, Iowa.	118	1941-71	10-12-71 11-16-71 3-21-72 5- 2-72 6-14-72 7-25-72 9- 6-72	65.4 86.4 119 88.5 74.5 55.2 55.2
		Wisconsin River basin				
Wisconsin River	Mississippi River	NE1/4 sec.14, T.6 N., R.6 W., at bridge on U.S. Highway 18 at Bridgeport, Wisconsin.	11,700	1965-66 1969-71	4-26-72	46,300
		Little Maquoketa River basin				
L Maquoketa River tr	L Maquoketa River	SW1/4 sec.17, T.89 N., R.1 W., at culvert on county road D17, 2 miles north of Graf, Iowa.	0.32	-	8- 2-72	+ 2,580
L Maquoketa R tr	L Maquoketa River	SE1/4 sec.17, T.89 N., R.1 W., at culvert on county road D17, 1.5 miles north of Graf, Iowa.	0.71	-	8- 2-72	+ 1,830
L Maquoketa River	Mississippi River	SW1/4 sec.11, T.89 N., R.1 E., at bridge on county road Y21, 3 miles southwest of Durango, Iowa.	46.8	-	8- 2-72	+ 7,680
NF Little Maquoketa River	L Maquoketa River	NE1/4 sec.2, T.89 N., R.1 W., at bridge on county road, 3 miles southwest of Rickardsville, Iowa.	16.4	-	8- 2-72	+11,200
NF Little Maquoketa River tr	NF Little Maquoketa River	SE1/4 sec.2, T.89 N., R.1 W., at bridge on county road, 3.5 miles east of Bankston, Iowa.	3.42	-	8- 2-72	+ 4,100
NF Little Maquoketa River tr	NF Little Maquoketa River	NW1/4 sec.5, T.89 N., R.1 E., at bridge on county road Y21, 1.2 miles west of Five Points, Iowa.	2.20	-	8- 2-72	+ 4,360
NF Little Maquoketa River	L Maquoketa River	NW1/4 sec.35, T.90 N., R.1 E., at bridge on county road, 2 miles west of Durango, Iowa.	32.9	-	8- 2-72	+13,900
NF Little Maquoketa R tr	NF Little Maquoketa River	SW1/4 sec.4, T.89 N., R.1 E., at bridge on county road, 0.4 mile south of Five Points, Iowa.	0.49	-	8- 2-72	+ 1,210
		Maquoketa River basin				
NF Maquoketa River	Maquoketa River	NW1/4 sec.6, T.88 N., R.2 W., at bridge on U.S. Highway 20 near south edge of Dyersville, Iowa.	122	-	8- 2-72	9,440
NF Maquoketa River	Maquoketa River	NE1/4 sec.36, T.88 N., R.3 W., at bridge on county road D35, 0.75 mile west of Worthington, Iowa.	152	-	8- 2-72	8,430
NF Maquoketa River	Maquoketa River	NW1/4 sec.26, T.87 N., R.2 W., at bridge on State Highway 136 about 2 miles northwest of Cascade, Iowa.	196	-	8- 2-72 9-13-72	4,860 7,620

Discharge measurements made at miscellaneous sites during water year 1972

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
		Iowa River basin				
Iowa River	Mississippi River	SW1/4 sec.28, T.87 N., R.19 W., at bridge on county road D53, 1.7 miles northeast of Gifford, Iowa.	779	-	6-13-72	5,460
SF Iowa River	Iowa River	NW1/4 sec.27, T.87 N., R.20 W., at bridge on State Highway 299, 3 miles north of New Providence, Iowa.	223	-	6-13-72	916
Iowa River	Mississippi River	SW1/4 sec.4, T.86 N., R.19 W., at bridge on county road D55, 1 mile southeast of Gifford, Iowa.	1,097	-	6-13-72	6,550
Ralston Creek	Iowa River	At Gilbert Street in Iowa City, Iowa	8.00	1950, 1965, 1967, 1969	7-17-72	+ 2,330
		Skunk River basin				
S Skunk River	Skunk River	NW1/4 sec.1, T.79 N., R.21 W., at bridge on State Highway 117 in Colfax, Iowa.	803	-	6-15-72	+ 2,700
Indian Cr	S Skunk R	NW1/4 sec.29, T.80 N., R.20 W., at bridge on county road F34, 3.4 miles northeast of Colfax, Iowa.	410	-	6-14-72 6-15-72	7,350 4,090
S Skunk River	Skunk River	NW1/4 sec.29, T.79 N., R.19 W., at bridge on State Highway 14, about 5 miles southwest of Newton, Iowa.	1,281	1968	6-14-72	8,390
		Big Sioux River basin				
Big Sioux R	Missouri R	NE1/4 sec.9, T.90 N., R.48 W., at bridge 11 miles northwest of Sioux City, Iowa.	-	-	6- 7-72	5,040
		Nishnabotna River basin				
Crooked Creek	Troublesome Creek	SE1/4 sec.6, T.77 N., R.34 W., at bridge on county road, 3.5 miles northwest of Anita, Iowa.	23.9	1964	9-11-72	+14,800
Turkey Creek tr	Turkey Creek	NW1/4 sec.31, T.76 N., R.36 W., at bridge on county road bridge 4 miles south of Atlantic, Iowa.	about 4	-	9-11-72	+ 1,640

SEEPAGE INVESTIGATION

Discharge measurements were made during the 1972 water year, on Oct. 7, on the Little Sioux River to study channel gains and losses. The reach is 20.8 miles in length and extends from the Minnesota-Iowa state line to a county bridge 1.5 miles southwest of Milford, Iowa. The measurements were made during a period of constant base flow of the stream.

River Mile	Stream	Location	Time	Discharge
204.8	Little Sioux River	NW1/4 sec.10, T.100 N., R.37 W.	1115	0.0
203.3	Little Sioux River	SW1/4 sec.15, T.100 N., R.37 W.	1145	.073
201.2	Little Sioux River	NE1/4 sec.29, T.100 N., R.37 W.	1215	.071
199.8	Little Sioux River	NE1/4 sec.32, T.100 N., R.37 W.	1255	.073
198.5	Little Sioux River	SE1/4 sec.31, T.100 N., R.37 W.	1400	.136
197.0	Little Sioux River	NE1/4 sec.7, T.99 N., R.37 W.	1525	.162
195.0	Little Sioux River	SE1/4 sec.17, T.99 N., R.37 W.	1500	.170
193.9	Little Sioux River	SE1/4 sec.20, T.99 N., R.37 W.	1425	.090
191.8	Little Sioux River	SW1/4 sec.33, T.99 N., R.37 W.	1345	.989
189.7	Little Sioux River	SW1/4 sec.3, T.98 N., R.37 W.	1300	1.54
186.9	Little Sioux River	SE1/4 sec.16, T.98 N., R.37 W.	1120	1.79
184.0	Little Sioux River	SW1/4 sec.11, T.98 N., R.37 W.	1045	.480

DISCONTINUED GAGING STATIONS

The following gaging stations have been discontinued in Iowa. Continuous daily streamflow were collected for the period of record shown for each station.

Discontinued gaging stations

Station name	Station number	Drainage area (sq mi)	Period of record
Upper Iowa River near Decorah, Iowa.	05388000	568	1913-14; 1919-27; 1933-51.
Yellow River at Ion, Iowa.	05389000	221	1934-51.
Mississippi River at Clayton, Iowa.	05411500	79,200	1930-36.
Turkey River at Elkader, Iowa.	05412000	891	1932-42.
Maquoketa River near Delhi, Iowa.	05417500	347	1933-40.
Maquoketa River above North Fork Maquoketa River near Maquoketa, Iowa.	05418000	938	1913-14.
Wapsipinicon River at Stone City, Iowa.	05421500	1,324	1903-14.
West Branch (West Fork) Iowa River near Klemme, Iowa.	05448500	112	1948-58.
Iowa River near Iowa Falls, Iowa.	05450000	665	1911-14.
Upper Pine Lake at Eldora, Iowa.	05450500	14.9	1936-70.
Lower Pine Lake at Eldora, Iowa.	05451000	15.9	1936-70.
Iowa River near Belle Plaine, Iowa.	05452500	2,455	1939-59.
Lake MacBride near Solon, Iowa.	05453500	27.0	1936-71.
Cedar River at Mitchell, Iowa.	05457500	826	1933-42.
Shell Rock River at Marble Rock (Greene), Iowa.	05460500	1,318	1933-53.
Shell Rock River at Greene, Iowa.	05461000	1,357	1933-42.
Shell Rock River near Clarksville, Iowa.	05461500	1,626	1915-27; 1932-34.
Lake Keomah near Oskaloosa, Iowa.	05472000	3.06	1936-71.
Skunk River at Coppock, Iowa.	05473000	2,916	1913-44.
East Fork Des Moines River near Hardy, Iowa.	05478500	1,268	1940-54.
Des Moines River near Fort Dodge, Iowa.	05479500	3,753	1911-13.
Des Moines River near Boone, Iowa.	05481500	5,511	1920-68.
Des Moines River at Des Moines, Iowa.	05482000	6,245	1905-06; 1915-61.
Springbrook Lake near Guthrie Center, Iowa.	05483500	5.18	1936-71.
Raccoon River at Des Moines, Iowa.	05485000	3,590	1902-03.
Lake Ahquabi near Indianola, Iowa.	05487000	4.93	1936-71.
White Breast Creek near Knoxville, Iowa.	05488000	380	1945-62.
Lake Wapello near Drakesville, Iowa.	05490000	7.75	1936-71.
Fox River at Cantril, Iowa.	05494500	161	1940-51.
Dry Creek at Hawarden, Iowa.	06484000	48.4	1948-69.
Perry Creek at 38th Street, Sioux City, Iowa.	06600000	65.1	1945-69.
West Fork ditch at Holly Springs, Iowa.	06602000	399	1939-69.
Little Sioux River at Spencer, Iowa.	06605100	990	1936-42.
Little Sioux River near Kennebec, Iowa.	06606700	2,738	1939-69.
Maple River at Turin, Iowa.	06607300	725	1939-41.
Little Sioux River near Blencoe (Turin), Iowa.	06607510	4,470	1939-42.
Steer Creek near Magnolia, Iowa.	06609200	9.26	1963-69.
Thompson Creek near Woodbine, Iowa.	06609590	6.97	1963-69.
Waubonsie Creek near Bartlett, Iowa.	06806000	30.4	1946-69.
West Nishnabotna River at (near) White Cloud, Iowa.	06807500	967	1918-24.
Mule Creek near Malvern, Iowa.	06808000	10.6	1954-69.
Tarkio River (East Tarkio Creek) at Blanchard, Iowa.	06812000	200	1934-40.
West Nodaway River at Villisca, Iowa.	06816500	342	1918-25.
Honey Creek near Russell, Iowa.	06903500	13.2	1952-62.
Chariton River near Centerville, Iowa.	06904000	708	1938-59.

PART 2. WATER QUALITY RECORDS

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05387500 UPPER IOWA RIVER AT DECORAH, IOWA

LOCATION.--Lat 43°18'19", long 91°47'48", in NE1/4 SW1/4 sec.16, T.98 N., R.8 W., Winneshiek County, at gaging station on right bank 1,200 ft upstream from bridge on U.S. Highway 52, 1,500 ft downstream from Dry Run cutoff, and 3.0 miles upstream from Trout Run.

DRAINAGE AREA.--511 sq mi.

PERIOD OF RECORD.--Water temperatures: October 1962 to September 1964, October 1965 to current year.
Sediment records: October 1962 to December 1967.

EXTREMES.--Current year: Water temperatures: Maximum, 29.0°C June 26, 27, Aug. 17; freezing point on many days during winter months.

Period of record: Water temperatures: Maximum, 32.0°C Aug. 23, 1968; freezing point on many days during winter months each year.

REMARKS.--Flow affected by ice Dec. 1-3, 17, 18, Dec. 28 to Mar. 13. Temperature recorder installed on Apr. 12, 1967.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 to SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	21.0	18.5	8.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	21.0	18.5	8.5	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	19.5	16.0	6.5	4.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	16.5	13.0	5.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	16.0	12.0	6.0	4.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	14.5	11.0	5.0	0.5	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
7	14.5	9.0	1.0	0.0	1.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
8	14.0	10.0	1.0	0.0	3.0	1.5	0.0	0.0	0.5	0.0	0.0	0.0
9	13.0	10.0	3.5	1.0	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
10	13.5	9.0	4.0	1.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
11	13.5	9.0	4.5	1.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	10.5	8.0	4.5	3.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	11.5	7.0	5.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	13.5	8.0	8.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	14.5	8.5	8.0	5.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
16	14.5	10.5	8.0	6.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
17	16.5	10.5	10.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
18	16.5	14.0	10.0	6.5	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.5
19	19.0	15.5	6.5	4.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.5
20	16.0	14.0	4.5	3.0	0.5	0.0	0.0	0.0	0.0	0.0	4.5	3.0
21	16.5	14.0	3.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	4.5	4.5
22	15.5	14.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.0
23	15.0	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.5
24	14.0	13.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.5
25	15.5	12.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	6.0	3.0
26	14.5	13.5	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	4.5	3.0
27	14.5	11.5	2.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	3.0	1.5
28	12.0	9.5	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	3.5	1.5
29	11.0	10.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.0
30	14.0	11.0	1.5	0.0	0.0	0.0	0.0	0.0	---	---	4.5	1.5
31	11.5	8.0	---	---	0.0	0.0	0.0	0.0	---	---	5.0	3.0
MONTH	21.0	7.0	10.0	0.0	3.0	0.0	0.5	0.0	0.5	0.0	6.0	0.0

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05387500 UPPER IOWA RIVER AT DECORAH, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.5	3.5	13.5	11.5	22.0	15.0	28.5	20.0	19.5	18.0	22.0	18.5
2	5.0	4.0	12.0	11.0	23.5	18.5	26.5	20.0	19.0	17.0	21.0	18.0
3	5.0	3.0	14.0	10.0	26.0	19.5	24.5	16.5	19.5	17.0	18.5	16.0
4	4.5	2.0	13.5	12.0	24.5	20.0	24.0	13.0	19.0	16.0	18.0	15.0
5	7.0	2.0	12.0	10.5	22.0	19.0	27.0	11.0	18.0	16.0	20.5	15.0
6	7.0	4.5	12.0	11.0	25.5	18.5	19.5	11.5	18.0	16.5	19.5	17.0
7	5.0	2.0	13.0	10.5	23.5	19.5	25.0	14.5	18.5	15.5	19.0	18.0
8	6.5	1.0	15.0	10.0	25.5	19.5	21.0	15.0	18.0	16.0	20.5	16.0
9	6.5	4.0	16.0	11.5	24.0	19.0	21.0	17.0	17.0	14.0	19.5	15.0
10	10.5	4.5	16.5	11.5	22.0	15.5	22.0	19.5	18.0	14.5	18.0	16.0
11	9.0	8.0	16.0	13.0	22.0	14.5	23.0	20.5	21.5	16.5	16.5	15.5
12	8.0	7.0	18.0	13.5	26.5	17.0	21.5	19.0	24.0	19.5	17.0	16.5
13	8.5	7.0	17.0	15.0	27.0	20.5	22.0	19.0	25.0	20.5	18.5	16.5
14	8.0	6.0	16.0	14.0	23.5	20.5	22.0	19.0	27.0	21.5	18.5	15.5
15	11.0	6.0	19.0	13.5	25.0	18.0	21.0	18.0	26.5	23.0	19.0	15.0
16	14.0	9.5	21.0	15.0	21.0	17.0	22.0	18.5	28.5	23.5	20.0	15.0
17	15.0	9.5	23.0	16.5	22.0	15.0	21.5	19.5	29.0	24.0	20.0	16.0
18	16.0	12.0	25.0	19.5	24.5	16.5	21.5	18.0	28.5	24.0	20.5	18.5
19	14.0	10.5	25.0	19.5	24.5	19.0	21.0	19.5	28.0	24.0	21.5	18.5
20	13.5	9.0	25.5	19.5	21.0	16.0	24.0	20.0	28.0	23.0	21.5	19.5
21	11.0	6.5	25.5	19.5	20.5	13.5	26.5	21.5	27.0	23.5	19.5	15.5
22	8.0	6.5	26.0	20.0	23.0	14.0	28.0	23.5	25.0	20.0	16.5	13.5
23	8.0	5.5	24.5	20.0	23.0	14.5	28.5	24.0	20.0	18.0	15.0	12.0
24	10.5	6.0	22.0	19.5	24.0	13.5	28.5	23.5	20.0	17.0	15.5	14.5
25	12.0	7.0	23.5	18.5	28.0	16.0	25.5	21.5	19.0	18.0	15.5	15.5
26	13.5	8.5	23.0	19.5	29.0	16.0	23.5	18.5	18.5	17.0	15.5	14.0
27	11.5	10.0	24.0	18.0	29.0	19.0	18.5	17.0	21.5	17.0	14.0	12.0
28	10.5	9.5	22.0	19.5	26.0	20.0	19.5	16.5	23.5	18.5	13.5	13.0
29	11.5	9.0	20.5	19.0	25.5	20.0	21.5	16.5	25.0	19.5	13.0	11.5
30	11.5	10.0	19.0	15.5	28.5	20.0	24.5	19.0	23.5	20.0	11.5	10.5
31	---	---	20.0	14.0	---	---	23.0	19.5	22.0	20.5	---	---
MONTH	16.0	1.0	26.0	10.0	29.0	13.5	28.5	11.0	29.0	14.0	22.0	10.5
YEAR	29.0	0.0										

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-12-71	1300	80.	530.		8.1
11-16-72	0900	147.	500.	7.5	8.4
02-08-72	0900	89.	575.	0.0	8.1
03-21-72	0900	659.	390.	4.5	7.9
05-02-72	0800	379.	440.	11.5	8.1
06-13-72	1400	111.	300.	26.0	8.3
07-24-72	2000	241.	430.	29.0	8.3

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
OCT., 1971				
12...	9.0	80	10	2.2
JUNE, 1972				
13...	26.0	111	54	16

05414700 MISSISSIPPI RIVER AT DUBUQUE, IOWA

LOCATION.--Lat 42°32'25", long 90°38'42", in NE1/4 NE1/4 sec.7, T.89 N., R.3 E., Dubuque County, at Lock and Dam No. 11 at outer streamward lock wall, 130 ft upstream from dam, and at mile 1,536.8.
DRAINAGE AREA.--81,600 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.
REMARKS.--Water discharge furnished by District Office, Corps of Engineers, Rock Island, Illinois. Station operated by EPA during period December 1957 to September 1969.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOL-VED-PHOS-PHORUS (P) (MG/L)	DIS-SOLVED SOLIDS (TONS PER DAY)
OCT.												
04...	--	--	--	170	--	--	--	--	--	--	--	--
12...	--	--	--	160	--	--	--	--	--	--	--	--
13...	32000	--	--	--	25	--	.28	.03	.1	.26	.14	--
18...	--	--	--	148	--	--	--	--	--	--	--	--
25...	--	--	--	160	--	--	--	--	--	--	--	--
NOV.												
01...	--	--	--	164	--	--	--	--	--	--	--	--
03...	60000	--	--	--	24	--	.43	.04	.3	.34	.16	--
08...	--	--	--	160	--	--	--	--	--	--	--	--
16...	--	--	--	152	--	--	--	--	--	--	--	--
30...	--	--	--	134	--	--	--	--	--	--	--	138
DEC.												
06...	--	--	--	146	--	--	--	--	--	--	--	--
10...	42000	6.1	2.0	--	26	.2	.38	.08	.9	.18	.12	--
14...	--	--	--	152	--	--	--	--	--	--	--	--
20...	--	--	--	146	--	--	--	--	--	--	--	--
28...	--	--	--	158	--	--	--	--	--	--	--	--
JAN.												
03...	--	--	--	172	--	--	--	--	--	--	--	--
05...	26000	--	--	--	34	--	.38	.11	1.1	.29	.20	--
10...	--	--	--	184	--	--	--	--	--	--	--	--
24...	--	--	--	180	--	--	--	--	--	--	--	--
31...	--	--	--	194	--	--	--	--	--	--	--	--
FEB.												
08...	--	--	--	190	--	--	--	--	--	--	--	--
10...	24000	--	--	--	33	--	.32	.19	1.0	.18	.12	--
MAR.												
08...	27000	--	--	--	25	--	1.3	1.0	1.0	.35	.22	--
23...	--	--	--	118	--	--	--	--	--	--	--	--
27...	--	--	--	126	--	--	--	--	--	--	--	--
APR.												
03...	--	--	--	114	--	--	--	--	--	--	--	--
10...	--	--	--	116	--	--	--	--	--	--	--	--
12...	--	--	--	--	29	--	1.0	.38	1.6	.28	.10	--

05414700 MISSISSIPPI RIVER AT DUBUQUE, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	HARD-NESS (CA,MG) (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
OCT.											
04...	150	--	8.4	18.0	--	--	5.4	58	--	3100	--
12...	142	--	8.8	14.0	--	--	4.5	44	--	4200	--
13...	--	--	--	--	20	15	--	--	--	--	.04
13...	--	320	--	12.5	--	--	--	--	5.0	--	--
18...	132	--	9.9	16.0	--	--	--	--	--	4900	--
25...	156	--	8.6	16.0	--	--	8.4	86	--	5200	--
NOV.											
01...	162	--	8.6	14.0	--	--	10.1	100	--	7200	--
03...	--	--	--	9.0	15	30	--	--	--	--	.03
03...	--	340	--	9.0	--	--	--	--	5.0	--	--
08...	150	--	8.4	7.0	--	--	12.3	100	--	5400	--
16...	144	--	8.3	8.0	--	--	10.5	90	--	4500	--
30...	--	--	8.4	3.0	--	--	11.6	87	--	3500	--
DEC.											
06...	142	--	8.4	2.0	--	--	12.3	90	--	2400	--
10...	--	--	--	3.0	45	5	--	--	--	--	.05
10...	--	320	--	3.0	--	--	--	--	4.2	--	--
14...	138	--	8.2	2.0	--	--	12.0	88	--	--	--
20...	144	--	8.2	1.5	--	--	17.0	123	--	1100	--
28...	154	--	8.2	1.0	--	--	17.7	126	--	1000	--
JAN.											
03...	162	--	8.2	1.0	--	--	16.7	120	--	1100	--
05...	--	--	--	.0	55	4	--	--	--	--	.12
05...	--	380	--	.0	--	--	--	--	5.8	--	--
10...	168	--	8.2	2.0	--	--	13.0	96	--	2200	--
24...	174	--	--	1.0	--	--	11.4	81	--	2000	--
31...	182	--	7.9	1.0	--	--	11.2	80	--	1800	--
FEB.											
08...	174	--	7.9	1.0	--	--	11.3	81	--	2500	--
10...	--	--	--	.5	40	2	--	--	--	--	.04
10...	--	380	--	.5	--	--	--	--	2.4	--	--
MAR.											
08...	--	--	7.8	.0	30	10	--	--	--	1800	.08
08...	--	390	--	.0	--	--	--	--	6.0	--	--
23...	126	--	8.0	3.0	--	--	9.8	74	--	1800	--
27...	124	--	8.2	4.0	--	--	10.9	85	--	1600	--
APR.											
03...	140	--	8.1	3.0	--	--	11.5	86	--	990	--
10...	144	--	8.1	6.0	--	--	11.6	94	--	900	--
12...	--	--	--	8.0	25	10	--	--	--	--	.10

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOL-VED-PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)
APR.												
12...	79000	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	138	--	--	--	--	--	--	--	140
24...	--	--	--	118	--	--	--	--	--	--	--	130
MAY												
01...	--	--	--	132	--	--	--	--	--	--	--	128
03...	120000	--	--	--	29	--	1.7	.19	.8	.27	.090	--
08...	--	--	--	134	--	--	--	--	--	--	--	142
15...	--	--	--	148	--	--	--	--	--	--	--	184
21...	--	--	--	152	--	--	--	--	--	--	--	194
30...	--	--	--	166	--	--	--	--	--	--	--	214
JUNE												
05...	--	--	--	--	--	--	--	--	--	--	--	206
12...	--	--	--	--	--	--	--	--	--	--	--	222
14...	56000	8.7	2.7	--	59	.1	1.4	.14	.5	.24	.11	--
28...	--	--	--	190	--	--	--	--	--	--	--	248
JULY												
10...	--	--	--	--	--	--	--	--	--	--	--	210
17...	--	--	--	160	--	--	--	--	--	--	--	194
24...	--	--	--	172	--	--	--	--	--	--	--	190
24...	50000	7.7	--	--	47	--	--	.24	.7	.22	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG.												
08...	--	--	--	148	--	--	--	--	--	--	--	142
14...	--	--	--	152	--	--	--	--	--	--	--	140
21...	--	--	--	152	--	--	--	--	--	--	--	142
25...	69000	5.4	--	--	25	--	--	.38	.5	.28	--	--
28...	--	--	--	142	--	--	--	--	--	--	--	132
SEP.												
05...	--	--	--	146	--	--	--	--	--	--	--	130
11...	--	--	--	156	--	--	--	--	--	--	--	136
14...	57000	5.0	--	--	18	--	--	.38	1.0	.43	--	--
18...	--	--	--	166	--	--	--	--	--	--	--	170

05414700 MISSISSIPPI RIVER AT DUBUQUE, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	COLOR (PLATINUM-COBALT UNITS)	TURBIDITY (JTU)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	IMMEDIATE COLIFORM (COL. PER 100 ML)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	ALDRIN (UG/L)
APR.												
12...	320	--	8.0	--	--	--	--	4.2	--	--	--	--
17...	--	8.2	9.0	--	--	11.0	97	--	--	3000	--	--
24...	--	8.1	8.0	--	--	11.2	95	--	--	2100	--	--
MAY												
01...	--	8.6	11.0	--	--	11.0	97	--	--	3200	--	--
03...	--	--	10.5	30	25	--	--	--	--	--	.06	--
03...	300	--	10.5	--	--	--	--	4.2	--	--	--	--
08...	--	8.4	11.0	--	--	11.2	97	--	--	3700	--	--
15...	--	8.6	12.0	--	--	10.4	121	--	--	1300	--	--
21...	--	8.7	23.0	--	--	10.3	85	--	--	2300	--	--
30...	--	8.4	21.0	--	--	6.3	72	--	--	3100	--	--
JUNE												
05...	--	8.1	22.0	--	--	5.7	66	-	--	1600	--	--
12...	--	8.2	21.0	--	--	5.5	63	--	--	1800	--	--
14...	--	--	23.0	25	8	5.5	65	--	--	--	.25	--
14...	440	--	23.0	--	--	--	--	4.1	--	--	--	--
28...	--	8.3	28.0	--	--	6.5	85	--	--	2400	--	--
JULY												
10...	--	8.2	24.0	--	--	5.8	69	--	--	8600	--	--
17...	--	8.2	24.0	--	--	5.2	62	--	--	3400	--	--
24...	--	8.2	27.0	--	--	5.4	68	--	--	3900	--	--
24...	--	--	28.0	--	15	--	--	--	--	--	--	.00
24...	410	--	28.0	--	--	--	--	2.4	26000	--	--	--
31...	--	--	24.0	--	--	--	--	--	--	5100	--	--
AUG.												
08...	--	8.0	22.0	--	--	5.7	66	--	--	8600	--	--
14...	--	8.0	24.0	--	--	5.8	69	--	--	7200	--	--
21...	--	7.9	26.0	--	--	4.6	58	--	--	13000	--	--
25...	--	--	24.5	--	10	--	--	--	--	--	--	--
25...	330	7.4	24.5	--	--	--	--	1.0	830	--	--	--
28...	--	8.0	22.5	--	--	4.9	56	--	--	11000	--	--
SEP.												
05...	--	8.0	21.5	--	--	5.6	64	--	--	8800	--	--
11...	--	8.1	20.0	--	--	7.0	78	--	--	--	--	--
14...	--	--	21.0	--	95	--	--	--	--	--	--	--
14...	280	--	21.0	--	--	--	--	2.8	8000	--	--	--
18...	--	8.0	23.0	--	--	7.4	86	--	--	--	--	--

DATE	CHLORDANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
JULY												
10...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	.0	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00

05454500 IOWA RIVER AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'24", long 91°32'27", in SE1/4 SE1/4 sec.9, T.79 N., R.6 W., Johnson County, at Benton Street bridge at Iowa City, 0.5 mile downstream from gaging station, 0.3 mile upstream from Ralston Creek, 4.1 miles downstream from Clear Creek and at mile 73.7.

DRAINAGE AREA.--3,271 sq mi.

PERIOD OF RECORD.--Chemical analysis: September 1906 to September 1907, January 1944 to September 1954.
Specific conductance: October 1968 to current year.
Water temperatures: January 1944 to current year.
Sediment records: October 1943 to current year.

EXTREMES.--Current year: Specific conductance: Maximum daily, 650 micromhos Jan. 30, 31, Feb. 12, 23; minimum daily, 230 micromhos Mar. 6.
Water temperatures: Maximum, 26.0°C May 29, Aug. 13-20; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,700 mg/l Dec. 15; minimum daily, 4 mg/l Nov. 24.
Sediment discharge: Maximum daily, 21,100 tons June 20; minimum daily, 4.2 tons Nov. 24.

Period of record: Specific conductance: Maximum daily, 700 micromhos Dec. 22, 1970; minimum daily, 150 micromhos Feb. 23, 24, 1971.
Water temperatures: Maximum, 32.0°C July 19, 1957, Aug. 24, 25, 1959, June 27, 1971; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 7,800 mg/l June 13, 1953; minimum daily, 2 mg/l Dec. 16, 18, 20, 21, 27, 1963.
Sediment discharge: Maximum daily, 177,000 tons May 23, 1944; minimum daily, 0.9 ton Dec. 16, 1963.

REMARKS.--Diurnal fluctuation at low stages caused by powerplant upstream. Flow regulated by Coralville Lake (Sta. 05453510) 9.6 miles upstream from Iowa City since Sept. 17, 1958. Flow affected by ice Jan. 4-6.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	460	480	490	500	580	460	---	480	530	460	390	---
2	460	380	490	500	520	280	---	480	540	390	410	---
3	460	300	490	550	590	290	---	500	540	450	390	---
4	450	340	500	550	590	250	---	500	520	470	390	---
5	450	430	500	550	610	260	---	500	520	490	390	---
6	450	500	500	550	600	230	---	500	510	490	390	---
7	450	500	540	550	640	250	---	490	510	---	380	---
8	450	490	540	540	520	250	---	490	500	---	390	---
9	460	490	550	560	550	250	---	500	480	---	400	---
10	510	500	550	540	520	250	500	480	480	510	400	---
11	480	500	550	550	590	260	515	490	490	515	360	---
12	500	500	540	540	650	270	500	490	490	480	360	---
13	480	500	540	590	600	250	490	500	480	480	360	500
14	490	500	550	600	580	240	480	480	420	480	360	500
15	490	500	400	600	580	260	480	500	410	480	360	500
16	490	500	550	600	550	300	430	480	390	480	340	---
17	480	500	540	610	580	350	430	520	390	500	340	490
18	---	500	540	590	570	350	430	520	390	500	370	500
19	470	500	550	600	590	340	420	---	360	---	400	510
20	470	480	550	620	600	390	430	530	360	---	400	540
21	480	530	590	610	600	400	460	530	370	---	400	550
22	480	490	540	610	600	500	---	530	370	---	400	570
23	500	490	550	610	650	---	---	540	350	---	400	560
24	500	500	550	590	570	---	480	540	350	---	450	570
25	480	490	560	610	540	---	500	550	350	---	400	570
26	480	490	550	590	580	---	490	540	350	400	---	580
27	490	490	570	600	600	---	490	540	370	390	---	580
28	480	---	570	640	550	---	490	530	460	390	---	580
29	460	490	590	620	470	---	490	530	420	390	---	600
30	460	490	500	650	---	490	490	540	460	390	---	600
31	480	---	500	650	---	---	---	530	---	390	---	---
MONTH	475	478	532	583	578	---	---	511	439	---	385	---
YEAR	484											

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	11.0	2.0	2.0	2.0	3.0	---	16.0	23.0	25.0	24.0	---
2	21.0	12.0	2.0	2.0	2.0	2.0	---	15.0	23.0	24.0	24.0	---
3	21.0	11.0	2.0	0.0	2.0	2.0	---	15.0	24.0	23.0	23.0	---
4	21.0	10.0	2.0	0.0	0.0	0.0	---	11.0	24.0	22.0	21.0	---
5	20.0	10.0	4.0	0.0	1.0	3.0	---	12.0	24.0	23.0	22.0	---
6	19.0	6.0	3.0	1.0	1.0	1.0	---	11.0	24.0	24.0	22.0	---
7	19.0	7.0	4.0	3.0	0.0	1.0	---	11.0	25.0	---	21.0	---
8	19.0	5.0	4.0	1.0	0.0	2.0	---	14.0	25.0	---	20.0	---
9	19.0	7.0	5.0	2.0	0.0	2.0	---	14.0	24.0	---	23.0	---
10	21.0	8.0	6.0	4.0	0.0	2.0	12.0	14.0	22.0	24.0	24.0	---
11	18.0	9.0	6.0	2.0	1.0	4.0	12.0	14.0	23.0	24.0	25.0	---
12	17.0	15.0	6.0	4.0	0.0	3.0	10.0	14.0	24.0	25.0	25.0	---
13	15.0	16.0	5.0	1.0	0.0	2.0	12.0	17.0	24.0	25.0	26.0	22.5
14	19.0	16.0	4.0	0.0	2.0	4.0	10.0	19.0	23.0	25.0	26.0	23.0
15	22.0	17.0	3.0	0.0	1.0	3.0	15.0	18.0	23.0	25.0	26.0	23.0
16	22.0	15.0	2.0	0.0	3.0	2.0	12.0	20.0	24.0	25.0	26.0	---
17	21.0	16.0	3.0	3.0	2.0	6.0	16.0	20.0	25.0	25.0	26.0	24.0
18	---	8.0	4.0	4.0	0.0	4.0	14.0	21.0	24.0	24.0	26.0	25.5
19	20.0	8.0	4.0	1.0	1.0	4.0	12.0	23.0	23.0	---	26.0	18.0
20	19.0	6.0	4.0	2.0	0.0	8.0	14.0	21.0	24.0	---	26.0	19.0
21	19.0	6.0	5.0	1.0	2.0	8.0	11.0	24.0	22.0	---	25.0	19.5
22	19.0	6.0	2.0	2.0	4.5	6.0	---	22.0	23.0	---	25.0	19.0
23	18.0	5.0	4.0	2.0	2.0	---	---	21.0	24.0	---	25.0	20.0
24	18.0	2.0	2.0	1.0	1.0	---	12.0	22.0	24.0	---	23.0	20.0
25	19.0	2.0	3.0	0.0	1.0	---	14.0	25.0	24.0	---	25.0	19.5
26	19.0	2.0	3.0	0.0	2.0	---	15.0	23.0	24.0	24.0	---	20.5
27	17.0	3.0	0.0	0.0	2.0	---	15.0	21.0	25.0	25.0	---	21.0
28	18.0	1.0	1.0	0.0	4.0	---	15.0	21.0	24.0	25.0	---	18.0
29	18.0	1.0	1.0	1.0	5.0	---	13.0	26.0	24.0	25.0	---	19.0
30	17.0	2.0	0.0	1.0	---	5.0	14.0	23.0	25.0	25.0	---	19.0
31	16.0	---	3.0	1.0	---	---	---	24.0	---	25.0	---	---
MONTH	19.0	8.0	3.0	1.5	1.5	---	---	18.5	24.0	---	24.0	---
YEAR	13.0											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-27-71	1610	143.	*****	17.0	***
10-23-71	1135	154.	*****	16.5	***
11-24-71	1445	445.	500.	****	7.9
12-01-71	1540	516.	*****	2.0	***
01-05-72	1515	558.	*****	0.0	***
02-01-72	1115	1240.	*****	0.0	***
02-22-72	1000	215.	730.	0.5	7.5
03-29-72	1430	1950.	650.	1.5	8.4
04-20-72	1140	3340.	*****	5.0	***
05-24-72	1830	1750.	*****	25.5	***
05-25-72	1510	1690.	310.	****	7.6
06-19-72	1500	4330.	360.	23.0	8.0
08-02-72	1015	4330.	*****	25.5	***
08-25-72	1135	4120.	550.	21.0	8.3
09-29-72	0950	1190.	*****	17.0	***

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	155	41	17	330	102	138	517	13	18
2	155	41	17	675	235	428	517	12	17
3	162	38	17	233	277	174	518	8	11
4	155	29	12	190	286	147	522	9	13
5	155	29	12	179	123	59	521	13	18
6	155	29	12	169	32	15	527	57	81
7	150	34	14	162	26	11	530	55	79
8	152	32	13	162	34	15	528	25	36
9	152	28	11	165	34	15	542	44	64
10	150	28	11	170	43	20	596	21	34
11	150	31	13	205	63	35	607	15	25
12	150	32	13	235	40	25	576	17	26
13	148	34	14	235	33	21	557	17	26
14	150	34	14	269	34	25	864	199	755
15	150	32	13	305	31	26	3730	1700	18200
16	150	34	14	305	31	26	3100	144	1340
17	150	39	16	298	31	25	2780	41	308
18	150	40	16	326	15	13	2680	19	137
19	172	39	18	336	18	16	2640	18	128
20	172	35	16	340	10	9.2	1770	17	81
21	165	37	16	336	14	13	697	18	34
22	158	33	14	336	10	9.1	682	27	50
23	155	58	24	340	6	5.5	683	23	42
24	152	63	26	392	4	4.2	677	29	53
25	152	72	30	440	12	14	673	17	31
26	150	70	28	449	17	21	673	11	20
27	153	49	20	459	7	8.7	662	12	21
28	150	34	14	473	6	7.7	637	38	65
29	163	73	32	491	6	8.0	628	22	37
30	230	78	48	524	5	7.1	811	67	147
31	171	69	32	--	--	--	654	70	124
TOTAL	4882	--	567	9529	--	1341.5	32099	--	22021

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	638	65	112	1290	37	129	3050	658	5560
2	604	52	85	1180	29	92	3080	307	2550
3	581	16	25	1150	26	81	3830	278	2870
4	580	56	88	1140	25	77	3790	192	1960
5	540	15	22	1130	24	73	3830	175	1810
6	560	9	14	1100	25	74	3770	192	1950
7	560	7	11	1090	54	159	3800	106	1090
8	565	10	15	1070	26	75	3680	102	1010
9	623	13	22	1050	38	108	2720	278	2040
10	526	31	44	936	28	71	2170	363	2130
11	440	15	18	684	29	54	2930	365	2890
12	442	11	13	673	32	58	3380	376	3430
13	425	12	14	664	26	47	4540	380	4660
14	421	51	58	522	26	37	5100	317	4370
15	440	23	27	292	33	26	5160	241	3360
16	388	10	10	216	44	26	5020	257	3480
17	289	11	8.6	226	47	29	3770	199	2030
18	266	14	10	230	38	24	2780	147	1100
19	261	14	9.9	266	42	30	2820	180	1370
20	260	11	7.7	215	42	24	2220	156	935
21	259	11	7.7	217	30	18	1650	137	610
22	260	11	7.7	209	22	12	1660	132	592
23	261	12	8.5	231	27	17	1780	198	952
24	259	13	9.1	257	38	26	1870	180	909
25	257	16	11	263	41	29	1990	165	887
26	250	21	14	261	44	31	1970	125	665
27	283	27	21	277	34	25	1940	93	487
28	316	35	30	818	114	479	1910	82	423
29	318	27	23	2590	662	5300	1900	69	354
30	317	23	20	--	--	--	1510	49	200
31	530	50	72	--	--	--	1200	37	120
TOTAL	12719	--	838.2	20247	--	7231	90820	--	56794

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1200	38	123	2910	1010	7940	1580	71	303
2	1200	39	126	3200	900	7780	1570	76	322
3	1210	40	131	3070	195	1620	1490	75	302
4	1320	56	200	2700	137	999	1370	75	277
5	1170	52	164	2420	128	836	1390	98	368
6	1100	52	154	2450	150	992	1390	112	420
7	1130	52	159	2950	186	1480	1490	126	546
8	1100	51	151	2820	197	1500	3100	424	3730
9	1090	48	141	1780	237	1140	3970	261	2800
10	987	47	125	1980	156	834	4000	180	1940
11	890	75	180	3010	127	1030	3990	170	1830
12	889	89	214	4010	108	1170	4000	168	1810
13	884	78	186	4130	103	1150	4100	202	2240
14	985	144	383	4220	98	1120	4350	522	6130
15	979	290	767	4140	111	1240	4500	541	6570
16	2800	380	2870	4040	118	1290	4270	213	2460
17	2590	375	2620	3980	90	967	4270	172	1980
18	2870	395	3060	3930	75	796	4290	211	2440
19	3040	320	2630	3510	100	948	4470	770	9290
20	3240	315	2760	2910	81	636	4730	1650	21100
21	3820	1010	11000	2890	76	593	4510	229	2790
22	3230	1200	10500	2430	77	505	4440	165	1980
23	3550	1170	11200	1640	101	447	4330	122	1430
24	3840	1320	13700	1670	73	329	4220	128	1460
25	4190	1040	11800	1630	72	317	4230	170	1940
26	4000	920	9940	1610	73	317	4240	121	1390
27	3530	907	8640	1600	77	333	4220	102	1160
28	1960	803	4250	1600	82	354	4260	44	506
29	1650	910	4050	2070	94	525	4220	58	661
30	2240	1020	6170	2070	74	414	4190	64	724
31	--	--	--	1920	55	285	--	--	--
TOTAL	62684	--	108394	85290	--	39887	107180	--	80899

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	4160	35	393	3950	660	7040	4060	86	943
2	4130	42	468	4150	882	9880	4030	83	903
3	4100	43	476	3550	630	6040	3980	80	860
4	4070	65	714	3990	598	6440	3940	77	819
5	4120	58	645	4480	462	5590	3910	73	771
6	4190	57	645	5670	590	9030	3870	69	721
7	4160	63	708	2700	421	3070	3530	59	562
8	4120	66	734	1820	430	2110	2850	49	377
9	4180	70	790	1570	300	1270	2460	43	286
10	4250	70	803	2050	230	1270	2460	54	359
11	4240	68	778	3710	178	1780	2450	70	463
12	4180	66	745	4160	150	1680	2460	76	505
13	4120	60	667	4160	152	1710	2460	70	465
14	4110	60	666	4160	148	1660	2160	46	268
15	4240	66	756	4160	107	1200	1870	36	182
16	4050	67	733	4170	103	1160	1880	59	299
17	6000	559	13600	4150	98	1100	1880	82	416
18	4120	1150	14900	4130	69	769	1730	63	294
19	2810	940	7130	4100	83	919	1480	63	252
20	4490	1100	13300	4080	72	793	1380	58	216
21	4300	925	10700	4050	137	1500	1380	59	220
22	4220	720	8200	4020	83	901	1300	64	225
23	4190	500	5660	4000	64	691	1220	46	152
24	4140	305	3410	4030	64	696	1230	51	169
25	4130	165	1840	4310	72	838	1230	40	133
26	4400	160	1900	4150	77	863	1230	43	143
27	4320	495	5770	4060	79	866	1220	47	155
28	4200	620	7030	4010	80	866	1180	53	169
29	4150	515	5770	4010	83	899	1160	50	157
30	4110	600	6660	4090	95	1050	1500	49	198
31	4050	638	6980	4060	91	998	--	--	--
TOTAL	130050	--	123571	119700	--	74679	67490	--	11682

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	742690
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	527904.7

05454500 IOWA RIVER AT IOWA CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM
DEC. 15...	3.0	--	5260	2290	32500	41	51	58	74
MAR. 29...	1.5	3	1950	--	--	--	--	--	--
APR. 21...	11.0	--	4630	1260	15800	31	35	47	57
MAY 24...	24.0	3	1590	--	--	--	--	--	--
AUG. 02...	25.5	4	4530	--	--	--	--	--	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
DEC. 15...	92	98	--	--	--	--	--	--	--
MAR. 29...	--	--	--	15	62	77	79	81	86
APR. 21...	85	99	--	--	--	--	--	--	--
MAY 24...	--	--	--	14	81	98	99	--	--
AUG. 02...	--	--	2	9	44	62	64	69	73

05455000 RALSTON CREEK AT IOWA CITY, IOWA

LOCATION.--Lat 41°39'50", long 91°30'48", in SE1/4 NW1/4 sec.11, T.79 N., R.6 W., Johnson County, at gaging station at bridge on Rochester Avenue, Iowa City, and 2.2 miles upstream from mouth.

DRAINAGE AREA.--3.01 sq mi.

PERIOD OF RECORD.--Specific conductance: April 1968 to current year.
Water temperatures: October 1960 to current year.
Sediment records: April 1952 to current year.

EXTREMES.--Current year: Specific conductance: Maximum daily, 1,520 micromhos Jan. 1; minimum daily, 170 micromhos July 17.
Water temperatures: Maximum, 28.5°C Aug. 13, 14; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 2,340 mg/l July 17; minimum daily, 3 mg/l Apr. 27.
Sediment discharge: Maximum daily, 2,840 tons July 17; minimum daily, 0 ton Oct. 1, 15, 18.

Period of record: Specific conductance: Maximum daily, 1,520 micromhos Jan. 1, 1972; minimum daily, 170 micromhos July 17, 1972.
Water temperatures: Maximum, 31.0°C July 21, 1968; freezing point on many days during winter months each year.
Sediment concentration: Maximum daily, 8,700 mg/l May 23, 1966; no flow on many days in 1953-59, 1963-68, 1971.
Sediment discharge: Maximum daily, 4,300 tons May 23, 1966; 0 ton on many days in 1953-59, 1963-68, 1971, 1972.

REMARKS.--Flow affected by ice Dec. 17-21, 25-27, Jan. 1-9, 12-16, Jan. 22 to Mar. 9.

REVISISONS (WATER YEARS).--WRD Iowa 1967: 1965-66.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	490	430	580	1520	550	445	570	500	500	470	420	450
2	550	500	600	1500	500	430	560	580	500	490	480	450
3	550	480	600	1500	540	450	500	520	610	500	410	460
4	550	520	610	500	540	700	500	480	610	490	425	460
5	550	520	600	1070	550	385	480	480	610	480	420	460
6	530	540	580	500	530	380	490	550	550	490	455	450
7	530	480	600	1000	650	420	495	510	600	490	430	470
8	530	520	580	1250	500	460	490	550	610	500	460	450
9	530	550	590	840	500	380	490	550	600	490	430	470
10	530	530	590	480	530	350	490	520	610	480	430	510
11	450	530	600	480	880	400	510	540	600	510	440	400
12	500	520	600	450	880	390	700	540	600	530	430	410
13	475	520	600	580	850	360	510	530	620	550	430	600
14	410	500	600	560	810	360	345	580	180	560	380	550
15	500	480	290	590	800	370	510	490	580	560	430	450
16	475	500	490	550	800	590	560	440	510	560	430	470
17	600	530	550	550	850	520	550	490	600	170	430	540
18	590	550	560	550	840	525	500	480	580	500	410	530
19	590	550	580	500	840	600	520	550	450	580	410	410
20	600	560	560	480	750	550	---	550	460	580	420	480
21	590	530	500	500	750	540	445	550	470	560	---	520
22	600	590	500	550	750	530	500	500	430	570	420	470
23	580	---	550	550	950	390	510	500	430	590	490	420
24	600	600	530	540	750	390	510	520	480	525	300	500
25	480	600	550	500	550	590	540	540	480	600	410	550
26	600	600	550	500	440	600	510	590	450	600	430	570
27	575	540	530	490	420	590	530	580	470	580	460	580
28	500	560	560	490	195	890	520	600	480	600	450	620
29	590	620	465	500	530	550	510	580	520	400	460	550
30	580	600	1500	500	---	575	540	590	480	415	470	500
31	570	---	1500	500	---	540	---	600	---	410	450	---
MONTH	542	536	616	680	656	492	513	535	522	511	430	492
YEAR	544											

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	12.0	1.0	4.5	0.0	0.5	8.5	10.0	21.0	24.5	26.5	26.0
2	19.5	10.5	0.5	1.0	0.0	0.5	9.0	7.0	21.0	25.0	27.0	26.0
3	19.5	10.0	1.0	0.0	0.0	0.5	8.5	9.0	21.0	25.5	26.5	26.5
4	19.5	9.5	1.0	0.0	0.0	1.0	8.0	10.0	21.5	26.5	26.5	26.0
5	19.0	7.0	1.0	0.0	0.0	0.5	8.5	9.5	21.5	26.0	27.0	25.5
6	19.0	5.0	1.0	0.0	0.0	0.5	9.0	9.5	20.5	26.5	26.5	25.5
7	19.0	10.5	1.0	0.5	0.0	0.5	3.5	9.0	21.0	26.5	26.0	25.5
8	19.5	5.0	1.0	1.0	0.0	1.0	4.0	10.0	21.0	26.5	26.0	25.5
9	19.0	5.0	1.0	0.5	0.0	1.0	4.5	10.0	21.0	26.5	26.0	25.0
10	18.5	5.0	0.5	0.0	0.0	1.0	5.0	10.5	21.0	27.0	27.0	25.5
11	17.0	5.5	0.5	0.5	0.0	1.0	7.0	10.5	21.5	27.0	27.0	26.0
12	15.5	6.0	0.5	0.0	0.0	1.0	7.0	10.5	21.0	26.5	28.0	26.5
13	14.5	6.5	0.5	0.0	0.0	1.0	8.0	10.0	21.0	27.0	28.5	26.5
14	13.5	7.0	1.5	0.0	0.0	1.0	9.0	11.0	20.5	28.0	28.5	26.0
15	15.0	7.0	3.0	0.0	0.0	1.0	10.0	12.0	21.0	28.0	28.0	26.0
16	15.5	6.5	2.0	0.0	0.5	1.0	9.5	13.5	21.0	28.0	28.0	25.5
17	14.5	6.0	3.0	0.0	0.0	1.5	10.0	14.5	20.5	26.5	27.0	25.5
18	10.5	5.5	3.0	0.0	0.0	1.5	10.5	15.5	21.5	---	26.5	25.5
19	16.5	4.5	2.0	0.0	0.0	1.5	10.5	16.0	21.5	28.0	26.5	25.0
20	17.0	3.5	2.0	0.0	0.0	1.5	10.5	16.0	21.5	28.0	26.0	25.0
21	16.5	3.5	3.0	0.0	0.0	1.0	10.0	16.5	22.0	27.0	---	25.0
22	16.0	3.5	2.0	0.0	0.0	1.5	11.5	16.5	22.0	27.0	26.5	25.0
23	15.0	---	3.0	0.0	0.5	1.0	11.5	16.5	22.0	28.0	23.0	25.0
24	15.0	3.5	2.0	0.0	0.5	1.5	12.0	16.0	23.0	27.0	26.0	24.5
25	15.5	2.0	2.0	0.0	0.5	2.0	12.0	18.5	23.0	28.0	26.5	24.5
26	15.5	1.5	1.5	0.0	0.5	3.0	12.0	18.5	23.5	26.5	26.5	21.0
27	15.0	1.0	1.5	0.0	0.5	4.0	12.0	19.5	23.5	27.0	25.5	24.0
28	14.0	2.0	4.0	0.0	0.5	4.5	13.0	20.0	24.0	27.0	26.0	21.0
29	13.5	1.0	3.5	0.0	0.5	5.0	13.0	20.0	24.0	28.0	25.5	18.5
30	13.5	1.0	1.5	0.0	---	5.5	13.5	20.5	24.5	28.0	25.5	15.5
31	13.0	---	1.5	0.0	---	7.0	---	20.5	---	26.5	25.5	---
MONTH	16.5	5.5	1.5	0.5	0.0	2.0	9.5	14.0	22.0	27.0	26.5	24.5
YEAR	12.5											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-27-71	1025	0.16	*****	15.0	***
11-01-71	1355	5.8	750.	10.0	***
11-23-71	1400	0.24	620.	1.0	7.[illegible]
12-27-71	1525	1.3	*****	2.0	***
01-27-72	1055	0.49	*****	0.0	***
02-23-72	0930	0.56	1250.	0.0	7.[illegible]
03-30-72	0940	1.4	*****	1.[illegible]	***
04-17-72	1300	7.9	350.	****	[illegible]
06-20-72	1430	3.5	610.	17.5	[illegible].2
07-24-72	1535	2.3	650.	23.0	[illegible].1
08-23-72	1020	1.2	450.	1[illegible].5	7.[illegible]
09-25-72	1410	0.45	630.	16.0	***

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.05	32	0	17	469	45	.34	45	.04
2	.07	62	.01	7.5	300	6.1	.37	13	.01
3	.12	43	.01	1.9	71	.36	.38	21	.02
4	.08	44	.01	1.2	35	.11	.39	28	.03
5	.06	52	.01	1.0	28	.08	.42	32	.04
6	.05	52	.01	.70	23	.04	.69	63	.12
7	.05	53	.01	.56	22	.03	.70	49	.09
8	.07	51	.01	.55	23	.03	.60	23	.04
9	.07	45	.01	.58	28	.04	.65	18	.03
10	.06	34	.01	.47	31	.04	2.2	204	1.2
11	.05	56	.01	.45	38	.05	1.5	76	.31
12	.05	88	.01	.47	60	.08	1.1	22	.07
13	.05	80	.01	.41	71	.08	.84	17	.04
14	.06	72	.01	.39	52	.05	1.3	120	.42
15	.05	35	0	.35	49	.05	54	1530	330
16	.05	44	.01	.32	76	.07	6.1	149	2.5
17	.06	48	.01	.32	49	.04	3.5	73	.69
18	.05	36	0	.40	38	.04	2.6	28	.20
19	.31	540	.45	.30	34	.03	2.3	10	.06
20	.82	850	1.9	.31	29	.02	2.0	58	.31
21	.25	55	.04	.27	96	.07	1.8	148	.72
22	.16	34	.01	.24	80	.05	1.6	150	.65
23	.15	42	.02	.28	35	.03	1.8	125	.61
24	.14	47	.02	.31	15	.01	1.6	135	.58
25	.13	50	.02	.34	18	.02	1.5	104	.42
26	.13	83	.03	.57	56	.09	1.4	69	.26
27	.14	106	.04	.58	68	.11	1.2	89	.29
28	.14	125	.05	.44	39	.05	1.0	128	.35
29	.65	200	.35	.52	37	.05	1.8	432	4.8
30	5.4	415	6.1	.42	48	.05	9.2	575	26
31	.64	67	.12	--	--	--	2.4	185	1.2
TOTAL	10.16	--	9.30	39.15	--	52.87	107.28	--	372.10

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1.8	265	1.3	.30	28	.02	3.0	111	.90
2	1.5	55	.22	.31	28	.02	1.4	114	.43
3	1.1	58	.17	.26	23	.02	1.0	193	.52
4	.90	71	.17	.20	25	.01	.80	299	.65
5	.80	100	.22	.14	23	.01	.70	145	.27
6	.84	65	.15	.11	17	.01	.90	66	.16
7	.90	24	.06	.10	52	.01	1.6	61	.26
8	1.4	9	.03	.10	36	.01	.70	28	.05
9	1.8	73	.35	.10	56	.02	.80	33	.07
10	1.2	31	.10	.12	38	.01	1.2	56	.18
11	1.0	22	.06	.17	35	.02	1.9	120	.62
12	.90	21	.05	.30	23	.02	5.7	135	2.1
13	.60	92	.15	.35	26	.02	5.5	161	2.4
14	.45	113	.14	.40	31	.03	15	180	7.3
15	.30	67	.05	.35	32	.03	14	1740	66
16	.40	73	.08	.30	28	.02	3.7	215	2.1
17	.47	127	.16	.80	13	.03	2.8	36	.27
18	.44	87	.10	2.0	18	.10	2.2	32	.19
19	.24	65	.04	1.3	19	.07	2.3	28	.17
20	.16	88	.04	.70	17	.03	2.6	8	.06
21	.16	90	.04	.60	11	.02	2.5	7	.05
22	.20	58	.03	.50	9	.01	2.2	31	.18
23	.25	32	.02	.60	11	.02	1.8	26	.13
24	.30	17	.01	.70	12	.02	1.8	18	.09
25	.35	46	.04	.80	27	.06	1.7	56	.26
26	.40	44	.05	.60	77	.12	1.6	55	.24
27	.48	33	.04	30	580	47	1.7	26	.12
28	.40	37	.04	80	1060	229	1.6	16	.07
29	.30	53	.04	20	325	18	1.9	16	.08
30	.25	47	.03	--	--	--	2.1	25	.14
31	.28	29	.02	--	--	--	2.9	59	.46
TOTAL	20.57	--	4.00	142.21	--	294.76	89.60	--	86.52

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.0	105	.85	6.0	70	1.1	1.2	25	.08
2	2.7	66	.48	4.7	76	.96	1.1	39	.12
3	2.3	31	.19	4.0	42	.45	.99	25	.07
4	2.1	27	.15	3.6	14	.14	.88	20	.05
5	1.8	36	.17	3.8	35	.36	2.4	143	.93
6	1.3	34	.12	4.0	680	7.3	2.2	199	1.2
7	1.2	26	.08	12	2110	68	1.6	134	.58
8	.94	36	.09	13	690	24	8.4	93	2.1
9	1.1	36	.11	7.1	20	.38	2.5	34	.23
10	.95	21	.05	5.5	21	.31	1.6	21	.09
11	.92	13	.03	4.8	20	.26	1.3	10	.04
12	.96	62	.16	4.3	15	.17	1.3	11	.04
13	1.0	74	.20	6.1	119	2.0	1.6	18	.08
14	8.6	713	40	6.0	236	3.8	3.0	344	4.4
15	4.8	200	2.6	5.0	100	1.4	2.4	135	.87
16	43	970	113	4.3	48	.56	1.4	23	.09
17	8.6	115	2.7	3.8	35	.36	1.2	31	.10
18	5.9	18	.29	3.5	28	.26	1.1	30	.09
19	5.3	9	.13	3.3	17	.15	6.9	768	48
20	4.7	23	.29	3.0	9	.07	3.9	1490	16
21	23	850	53	2.9	32	.25	2.3	114	.71
22	9.9	290	7.8	2.7	15	.11	1.6	117	.51
23	6.6	107	1.9	2.9	15	.12	1.4	142	.54
24	5.1	56	.77	1.8	21	.10	1.2	136	.44
25	4.4	26	.31	1.1	5	.01	1.1	135	.40
26	4.0	9	.10	1.1	30	.09	.99	86	.23
27	3.7	3	.33	.99	46	.12	.99	63	.17
28	3.8	6	.06	1.4	43	.16	1.3	57	.20
29	4.1	7	.08	6.4	84	1.5	1.1	50	.15
30	4.0	14	.15	1.8	12	.06	.98	52	.14
31	--	--	--	1.4	17	.06	--	--	--
TOTAL	169.77	--	225.89	132.29	--	114.61	59.93	--	78.65

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.82	68	.15	6.0	188	3.0	1.4	70	.26
2	.85	83	.19	14	166	6.3	1.4	60	.23
3	.73	60	.12	5.1	83	1.1	1.3	59	.21
4	.70	30	.06	4.0	128	1.4	1.1	53	.16
5	.67	88	.16	18	330	16	1.1	41	.12
6	.62	46	.08	65	1040	183	1.0	36	.10
7	.99	50	.13	8.5	177	4.1	1.6	31	.13
8	1.7	79	.36	13	128	4.5	1.5	45	.18
9	1.6	83	.36	6.1	102	1.7	1.0	31	.08
10	.92	45	.11	4.5	87	1.1	1.7	95	.44
11	1.1	96	.29	4.0	72	.78	1.4	130	.49
12	.90	187	.45	3.5	70	.66	2.3	92	.57
13	1.0	112	.30	3.1	67	.56	1.7	28	.13
14	2.6	91	.64	2.4	67	.43	1.4	33	.12
15	4.3	98	1.1	2.2	45	.27	1.2	62	.20
16	2.6	79	.55	2.0	54	.29	1.2	62	.20
17	146	2340	2840	1.8	74	.36	1.3	36	.13
18	9.2	790	20	1.7	59	.27	1.2	31	.10
19	12	166	5.4	1.6	57	.25	1.2	69	.22
20	6.0	165	2.7	1.5	53	.21	1.3	78	.27
21	3.9	143	1.5	1.6	46	.20	1.3	71	.25
22	2.9	125	.98	1.4	82	.31	1.2	66	.21
23	3.2	127	1.1	1.3	65	.23	1.1	90	.27
24	2.4	81	.52	1.4	101	.38	.99	85	.23
25	1.9	54	.28	12	109	3.5	.82	48	.11
26	7.2	775	15	2.7	51	.37	.56	44	.07
27	3.1	112	.94	1.8	64	.31	.51	27	.04
28	2.4	40	.26	1.5	64	.26	1.2	62	.20
29	1.9	99	.51	1.4	70	.26	1.2	31	.10
30	1.8	130	.63	1.3	75	.26	.70	27	.05
31	2.3	47	.29	1.3	77	.27	--	--	--
TOTAL	228.30	--	2895.16	195.7	--	232.63	36.88	--	5.87

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	1231.84
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	4372.36

05455000 RALSTON CREEK AT IOWA CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
MAR.							
15...	2.0	35	5230	494	24	29	34
APR.							
14...	10.0	9.9	2160	58	25	28	36
21...	11.0	51	3480	479	22	27	33
JULY							
17...	24.0	1750	7720	36500	31	42	54

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
MAR.						
15...	50	79	100	--	--	--
APR.						
14...	50	70	80	83	91	100
21...	44	73	98	100	--	--
JULY						
17...	74	96	98	98	99	100

IOWA RIVER BASIN

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA

LOCATION.--Lat 42°13'32", long 92°36'39", in SW1/4 sec.28, T.86 N., R.15 W., Tama County, 10 ft upstream from gaging station on bridge on county highway, 1 mile upstream from Half Mile Creek and 4.7 miles southeast of Lincoln.

DRAINAGE AREA.--13.78 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1969 to current year (partial-record station).
Water temperatures: October 1969 to current year (partial-record station).
Sediment records: October 1969 to current year.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 7,800 mg/l June 14; minimum daily, 67 mg/l Apr. 15, July 11.
Sediment discharge: Maximum daily, 5,790 tons June 14; minimum daily, 0.07 ton Oct. 9, 10, 12, 13, 17, Jan. 16, 17.

Period of record: Sediment concentrations: Maximum daily, 7,800 mg/l June 14, 1972; minimum daily, 15 mg/l July 5-7, 1970.
Sediment discharge: Maximum daily, 5,790 tons June 14, 1972; minimum daily, 0.03 ton Aug. 30, 31, Sept. 1, 2, 1970.

REMARKS.--Flow affected by ice Dec. 15 to Mar. 7.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SEPTEMBER 1971

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	410	---	---	---	---	---	---	---	---	---	430	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	480	---	---	510	---	600	---	---	---
5	---	---	510	---	550	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	480	---	---	---	190	---	550	---	---	---	---
8	---	---	---	500	---	---	---	---	---	---	580	---
9	500	---	---	---	---	---	490	---	---	490	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	300	---	---	550	570	480	560
12	---	---	480	500	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	470	---	---	550	---	---	550	---	---	---	---
15	---	---	---	---	---	---	---	470	---	---	---	---
16	---	---	---	---	---	---	450	---	---	480	---	---
17	490	---	---	---	---	460	---	---	---	---	---	---
18	540	---	---	---	---	---	---	---	590	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	450
20	---	---	---	---	520	---	---	---	580	---	---	---
21	---	4[illegible]0	---	---	---	---	---	---	---	---	---	---
22	---	---	480	530	550	---	---	---	---	---	440	---
23	---	---	---	---	---	---	510	---	---	500	---	---
24	420	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	500	---	---	510	---	---	---	---	---	---
27	---	---	---	---	---	---	---	480	---	---	---	---
28	---	500	---	---	---	---	---	490	---	---	---	480
29	---	---	---	490	250	---	---	---	580	---	440	---
30	---	490	---	---	---	---	480	---	---	480	---	---
31	590	---	500	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	491											

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	21.5	---	---	---	---	---	---	---	---	---	18.5	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	0.0	---	---	5.5	---	24.5	---	---	---
5	---	---	1.5	---	0.0	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	0.5	---	---	---	0.5	---	7.0	---	---	---	---
8	---	---	---	1.5	---	---	---	---	---	---	18.0	---
9	24.0	---	---	---	---	---	13.5	---	---	26.0	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	3.5	---	---	18.5	23.0	16.5	19.0
12	---	---	1.0	1.5	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	9.0	---	---	0.0	---	---	10.5	---	---	---	---
15	---	---	0.5	---	---	---	---	16.5	---	---	---	---
16	---	---	---	---	---	---	6.5	---	---	24.5	---	---
17	20.5	---	---	---	---	11.0	---	---	---	---	---	---
18	18.0	---	---	---	---	---	---	---	20.0	---	---	---
19	---	---	---	---	---	---	---	---	19.0	---	---	21.5
20	---	---	---	---	0.0	---	---	---	14.5	---	---	---
21	---	0.5	---	---	---	---	---	---	---	---	---	---
22	---	---	0.5	0.0	0.0	---	---	---	---	---	19.5	---
23	---	---	---	---	---	---	10.0	---	---	25.5	---	---
24	21.0	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	0.5	---	---	2.0	---	---	---	---	---	---
27	---	---	---	---	---	---	---	23.5	---	---	---	---
28	---	1.0	---	---	---	---	---	16.5	---	---	---	16.5
29	---	---	---	0.0	1.5	---	---	---	21.5	---	20.0	---
30	---	2.0	---	---	---	---	13.0	---	---	24.5	---	---
31	9.5	---	0.5	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	11.0											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-15-71	1245	0.23	540.	[illegible]	[illegible]
11-30-71	1335	0.04	*****	2.0	***
01-04-72	1315	0.43	370.	0.0	[illegible]
02-22-72	1235	0.76	430.	0.0	[illegible]
04-04-72	1155	3.9	*****	5.5	***
05-15-72	1715	3.0	470.	****	[illegible]
08-08-72	1700	25.	*****	18.0	***
09-11-72	1350	15.	570.	19.0	[illegible]

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.19	284	.15	2.5	299	2.0	.50	111	.15
2	.21	290	.16	3.7	342	3.4	.45	108	.13
3	.15	286	.12	1.5	295	1.2	.54	107	.16
4	.16	274	.12	1.1	272	.81	.62	107	.18
5	.15	255	.10	.97	241	.63	.80	107	.23
6	.15	232	.09	.63	238	.40	.90	107	.26
7	.16	205	.09	.58	279	.44	1.1	106	.31
8	.16	176	.08	.68	276	.51	1.4	104	.39
9	.17	146	.07	.95	279	.72	1.8	101	.49
10	.20	127	.07	.78	272	.57	3.5	151	1.4
11	.23	121	.08	.70	267	.50	3.2	206	1.8
12	.22	121	.07	.66	264	.47	2.5	191	1.3
13	.21	125	.07	.63	261	.44	2.0	190	1.0
14	.25	131	.09	.63	259	.44	1.8	188	.91
15	.22	138	.08	.66	257	.46	2.0	182	.98
16	.20	147	.08	.66	250	.45	1.4	175	.66
17	.17	156	.07	.68	241	.44	1.1	171	.51
18	.25	158	.11	.75	231	.47	1.2	167	.54
19	.33	156	.14	.66	219	.39	1.3	166	.58
20	.40	159	.17	.52	208	.29	1.1	165	.49
21	.37	162	.16	.43	236	.27	1.0	165	.45
22	.29	166	.13	.35	224	.21	1.0	165	.45
23	.28	171	.13	.40	205	.22	1.1	162	.48
24	.28	176	.13	.48	182	.24	1.0	153	.41
25	.27	177	.13	.60	163	.26	.90	141	.34
26	.27	172	.13	.84	150	.34	.80	151	.33
27	.57	252	.39	.82	140	.31	.72	226	.44
28	.40	262	.28	.80	130	.28	.69	201	.37
29	.46	261	.32	.90	122	.30	.72	186	.36
30	1.2	305	.99	.84	116	.26	.75	179	.36
31	.83	305	.68	--	--	--	.78	177	.37
TOTAL	9.40	--	5.48	26.40	--	17.72	38.67	--	16.83

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.56	178	.27	.60	162	.26	35	407	38
2	.50	183	.25	.60	172	.28	8.0	303	6.5
3	.45	189	.23	.59	184	.29	2.5	244	1.6
4	.43	194	.23	.59	198	.32	2.2	204	1.2
5	.40	188	.20	.60	209	.34	2.0	172	.93
6	.43	170	.20	.61	214	.35	150	453	183
7	.50	145	.20	.59	212	.34	90	597	145
8	.70	118	.22	.58	203	.32	8.7	532	12
9	1.0	104	.28	.59	193	.31	6.3	533	9.1
10	2.1	103	.58	.60	181	.29	5.7	575	8.8
11	1.8	106	.52	.61	165	.27	19	688	40
12	1.4	108	.41	.63	147	.25	6.8	605	11
13	.90	107	.26	.64	134	.23	11	615	18
14	.45	110	.13	.65	125	.22	5.1	570	7.8
15	.30	112	.09	.65	121	.21	9.7	550	14
16	.25	109	.07	.67	121	.22	5.9	465	7.4
17	.22	110	.07	.70	172	.33	4.0	315	3.4
18	3.0	202	1.6	.70	210	.40	3.1	240	2.0
19	2.0	205	1.1	.71	179	.34	3.0	202	1.6
20	1.6	169	.73	.72	151	.29	2.9	181	1.4
21	1.3	142	.50	.70	132	.25	3.9	198	2.1
22	1.1	131	.39	.70	114	.22	3.9	233	2.5
23	1.0	131	.35	.74	130	.26	3.1	205	1.7
24	.84	137	.30	.88	250	.59	2.6	186	1.3
25	.74	134	.27	1.0	208	.56	2.4	170	1.1
26	.72	136	.26	1.1	160	.48	2.3	155	.96
27	.68	137	.25	.93	138	.35	2.9	157	1.2
28	.68	139	.26	40	319	34	3.6	169	1.6
29	.66	141	.25	120	492	159	3.8	188	1.9
30	.62	146	.24	--	--	--	3.7	210	2.1
31	.62	153	.26	--	--	--	3.0	234	1.9
TOTAL	27.95	--	10.97	178.68	--	201.57	416.1	--	531.09

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	2.8	262	2.0	7.1	290	5.6	2.8	119	.90
2	2.8	299	2.3	6.9	231	4.3	2.7	113	.82
3	2.8	336	2.5	5.5	200	3.0	2.6	110	.77
4	2.8	349	2.6	4.8	182	2.4	2.5	106	.72
5	2.4	335	2.2	4.6	172	2.1	21	645	49
6	2.5	294	2.0	8.3	300	6.7	14	442	17
7	2.3	220	1.4	18	455	22	9.8	270	7.1
8	2.2	138	.82	16	354	15	18	370	18
9	2.1	97	.55	13	271	9.5	14	303	11
10	2.1	86	.49	11	219	6.5	10	240	6.5
11	2.0	81	.44	10	182	4.9	8.5	204	4.7
12	2.0	77	.42	8.8	153	3.6	18	1900	92
13	1.9	71	.36	8.0	128	2.8	91	4650	1140
14	1.8	68	.33	6.4	110	1.9	275	7800	5790
15	1.8	67	.33	5.3	110	1.6	46	1200	149
16	19	2170	140	5.0	112	1.5	23	700	43
17	13	1350	47	4.8	117	1.5	19	550	28
18	8.2	500	11	4.5	120	1.5	16	300	13
19	6.2	300	5.0	4.3	121	1.4	76	3500	718
20	5.2	210	2.9	4.5	122	1.5	36	3150	306
21	13	1400	62	4.2	128	1.5	19	313	16
22	14	930	35	4.0	133	1.4	15	300	12
23	8.8	285	6.8	3.9	139	1.5	14	288	11
24	6.0	156	2.5	4.1	142	1.6	12	273	8.8
25	5.2	150	2.1	3.8	148	1.5	12	260	8.4
26	4.6	143	1.8	3.8	151	1.5	11	248	7.4
27	4.1	142	1.6	3.7	149	1.5	11	238	7.1
28	4.1	142	1.6	3.4	135	1.2	16	338	15
29	4.7	148	1.9	3.2	130	1.1	12	277	9.0
30	4.8	165	2.1	3.0	126	1.0	7.9	257	5.5
31	--	--	--	2.8	122	.92	--	--	--
TOTAL	155.2	--	342.04	196.7	--	114.02	835.8	--	8495.71

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	7.3	235	4.6	21	206	12	5.3	79	1.1
2	7.1	215	4.1	106	370	106	5.0	78	1.1
3	6.4	195	3.4	24	270	17	4.8	75	.97
4	6.1	179	2.9	15	228	9.2	5.0	72	.97
5	5.9	161	2.6	27	258	19	4.9	70	.93
6	5.8	147	2.3	111	452	135	4.6	68	.84
7	5.5	132	2.0	30	245	20	11	229	6.8
8	5.4	117	1.7	30	160	13	7.6	120	2.5
9	5.2	101	1.4	24	131	8.5	6.9	108	2.0
10	4.6	85	1.1	19	117	6.0	8.4	170	3.9
11	4.4	67	.80	25	180	12	14	369	14
12	14	180	6.8	81	258	56	11	167	5.0
13	14	185	7.0	42	313	35	9.2	152	3.8
14	9.4	165	4.2	23	233	14	7.8	142	3.0
15	8.3	145	3.2	18	191	9.3	7.1	133	2.5
16	6.7	125	2.3	16	167	7.2	6.5	126	2.2
17	24	235	15	15	151	6.1	5.6	117	1.8
18	24	319	21	13	141	4.9	5.2	108	1.5
19	17	295	14	12	133	4.3	5.0	98	1.3
20	11	272	8.1	12	130	4.2	4.9	93	1.2
21	8.5	250	5.7	12	128	4.1	4.5	92	1.1
22	7.4	230	4.6	9.8	121	3.2	4.3	91	1.1
23	6.2	209	3.5	6.9	115	2.1	4.3	90	1.0
24	4.7	191	2.4	6.5	110	1.9	4.3	90	1.0
25	4.2	180	2.0	7.0	103	1.9	4.5	88	1.1
26	7.1	168	3.2	6.7	100	1.8	6.6	261	4.7
27	5.6	155	2.3	6.3	97	1.6	5.5	250	3.7
28	5.1	148	2.0	5.7	89	1.4	7.3	322	6.3
29	4.5	141	1.7	5.3	83	1.2	7.7	305	6.3
30	4.0	140	1.5	5.2	81	1.1	6.4	212	3.7
31	3.8	140	1.4	5.0	80	1.1	--	--	--
TOTAL	253.2	--	138.80	740.4	--	520.1	195.2	--	87.41

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	3073.70
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	10481.74

05464130 FOURMILE CREEK NEAR LINCOLN, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
JAN. 04...	.0	1	.43	--	--	--	--	--	--	--	--
APR. 04...	5.5	1	3.9	--	--	--	--	--	--	--	--
JUNE 19...	19.0	--	249	11300	7600	47	63	76	90	95	99

DATE	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
JAN. 04...	--	--	15	17	34	82	94	97	99	100
APR. 04...	--	--	4	5	19	67	95	98	100	--
JUNE 19...	99	100	--	--	--	--	--	--	--	--

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA

LOCATION.--Lat 42°12'41", long 92°36'39", in SW1/4 sec.33, T.86 N., R.15 W., Tama County, 10 ft upstream from gaging station on bridge on county highway, 0.8 mile upstream from mouth, and 5.3 miles northeast of Gladbrook.

DRAINAGE AREA.--1.33 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1969 to current year (partial-record station).
Water temperatures: October 1969 to current year (partial-record station).
Sediment records: October 1969 to current year.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 3,250 mg/l Apr. 16; minimum daily, no flow for Oct. 1-20, 22-26.
Sediment discharge: Maximum daily, 32 tons Aug. 2: minimum daily, 0 ton on many days during October, January, and February.

Period of record: Sediment concentrations: Maximum daily, 3,250 mg/l Apr. 16, 1972; minimum daily, no flow for Sept. 29 to Oct. 20, Oct. 22-26, 1971.
Sediment discharge: Maximum daily, 93 tons Mar. 2, 1970; minimum daily, 0 ton on many days in 1970, 1971, and 1972.

REMARKS.--Flow affected by ice Dec. 29 to Mar. 4.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	450	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	480	---	---	470	---	500	---	---	---
5	---	---	400	---	390	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	430	---	---	---	230	---	490	---	---	---	---
8	---	---	---	480	---	---	---	---	---	---	470	---
9	---	---	---	---	---	---	420	---	---	500	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	330	---	---	490	480	450	460
12	---	---	430	490	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	440	---	---	390	---	---	480	---	---	---	---
15	---	---	450	---	---	---	---	340	---	---	---	---
16	---	---	---	---	---	---	---	---	---	480	---	---
17	---	---	---	---	---	410	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	500	---	---	---
19	---	---	---	---	---	---	---	---	480	---	---	450
20	---	---	---	---	450	---	---	---	490	---	---	---
21	---	390	---	---	---	---	---	430	---	---	---	---
22	---	---	370	500	490	---	---	---	---	---	380	---
23	---	---	---	---	---	---	460	---	---	480	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	500	---	---	---
26	---	---	370	---	---	410	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	420	---	---	---	---	---	400	---	---	---	400
29	---	---	---	400	240	---	---	---	480	---	400	---
30	---	420	---	---	---	---	430	---	---	480	---	---
31	480	---	370	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	435											

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	18.0	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	0.0	---	---	2.0	---	24.5	---	---	---
5	---	---	1.5	---	0.0	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	1.0	---	---	---	0.5	---	6.5	---	---	---	---
8	---	---	---	2.0	---	---	---	---	---	---	17.0	---
9	---	---	---	---	---	---	13.5	---	---	25.0	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	3.0	---	---	20.5	21.5	16.5	18.5
12	---	---	1.5	1.5	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	9.0	---	---	0.0	---	---	11.5	---	---	---	---
15	---	---	0.5	---	---	---	---	22.0	---	---	---	---
16	---	---	---	---	---	---	6.0	---	---	21.0	---	---
17	---	---	---	---	---	10.5	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	22.0	---	---	---
19	---	---	---	---	---	---	---	---	17.0	---	---	18.0
20	---	---	---	---	0.0	---	---	---	14.0	---	---	---
21	---	1.0	---	---	---	---	---	25.0	---	---	---	---
22	---	---	1.5	0.0	0.0	---	---	---	---	---	19.0	---
23	---	---	---	---	---	---	11.0	---	---	24.5	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	0.5	---	---	1.5	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	1.5	---	---	---	---	---	16.5	---	---	---	16.5
29	---	---	---	0.0	1.0	---	---	---	20.0	---	19.0	---
30	---	2.0	---	---	---	---	13.0	---	---	25.0	---	---
31	9.0	---	0.5	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	10.0											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-18-71	1220	0.03	500.	****	7.9
11-30-71	1220	0.10	*****	2.0	***
01-04-72	1240	0.06	540.	0.0	8.2
02-22-72	1110	0.02	410.	0.0	8.3
04-04-72	1055	0.23	*****	2.0	***
05-15-72	1640	0.63	340.	****	8.0
08-08-72	1625	2.9	*****	17.0	***
09-11-72	1445	1.2	500.	19.0	[illegible]

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	0	0	0	.50	215	.29	.05	146	.02
2	0	0	0	.34	226	.21	.06	101	.02
3	0	0	0	.13	196	.07	.06	84	.01
4	0	0	0	.10	180	.05	.06	77	.01
5	0	0	0	.09	169	.04	.07	73	.01
6	0	0	0	.08	161	.03	.10	69	.02
7	0	0	0	.07	153	.03	.13	67	.02
8	0	0	0	.08	143	.03	.14	66	.02
9	0	0	0	.09	132	.03	.14	62	.02
10	0	0	0	.10	120	.03	.66	127	.23
11	0	0	0	.10	107	.03	.39	70	.07
12	0	0	0	.10	90	.02	.24	40	.03
13	0	0	0	.08	74	.02	.19	58	.03
14	0	0	0	.08	65	.01	.18	83	.04
15	0	0	0	.07	63	.01	.24	134	.09
16	0	0	0	.07	65	.01	.17	132	.06
17	0	0	0	.07	69	.01	.12	127	.04
18	0	0	0	.08	75	.02	.11	122	.04
19	0	0	0	.08	82	.02	.13	119	.04
20	0	0	0	.08	91	.02	.12	111	.04
21	.01	150	0	.07	101	.02	.10	99	.03
22	0	0	0	.06	112	.02	.09	87	.02
23	0	0	0	.06	120	.02	.11	83	.02
24	0	0	0	.07	128	.02	.10	82	.02
25	0	0	0	.07	134	.03	.09	82	.02
26	0	0	0	.08	142	.03	.07	77	.01
27	.01	154	0	.14	190	.07	.06	75	.01
28	.01	157	0	.14	235	.09	.05	78	.01
29	.01	168	0	.12	200	.06	.06	84	.01
30	.10	183	.05	.12	173	.06	.07	90	.02
31	.12	196	.06	--	--	--	.08	97	.02
TOTAL	.26	--	.11	3.32	--	1.40	4.24	--	1.05

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.07	108	.02	.03	49	0	1.0	340	.92
2	.06	124	.02	.03	46	0	.10	212	.06
3	.06	161	.03	.03	43	0	.06	147	.02
4	.06	199	.03	.03	39	0	.05	108	.01
5	.06	182	.03	.03	36	0	.04	87	.01
6	.06	154	.02	.02	36	0	.47	139	.35
7	.05	148	.02	.02	36	0	3.2	449	4.0
8	.07	226	.04	.02	37	0	.45	298	.36
9	.10	213	.06	.02	37	0	.19	195	.10
10	.20	264	.14	.02	37	0	.23	110	.07
11	.14	210	.08	.02	37	0	1.7	336	2.3
12	.09	100	.02	.02	38	0	.32	263	.23
13	.07	73	.01	.02	38	0	.35	222	.21
14	.05	62	.01	.02	40	0	.46	196	.24
15	.03	54	0	.02	62	0	.54	230	.34
16	.03	49	0	.02	103	.01	.62	278	.47
17	.02	45	0	.02	149	.01	.34	211	.19
18	.25	605	.41	.02	183	.01	.17	174	.08
19	.18	650	.32	.02	191	.01	.17	149	.07
20	.14	455	.17	.02	178	.01	.20	134	.07
21	.11	415	.12	.02	134	.01	.28	124	.09
22	.10	390	.11	.02	96	.01	.35	116	.11
23	.08	365	.08	.02	71	0	.32	113	.10
24	.07	345	.07	.02	58	0	.28	104	.08
25	.06	290	.05	.04	50	.01	.26	100	.07
26	.05	183	.02	.03	44	0	.25	97	.07
27	.05	111	.01	.03	38	0	.28	103	.08
28	.05	72	.01	3.0	298	2.4	.33	109	.10
29	.04	59	.01	20	375	20	.35	121	.11
30	.04	56	.01	--	--	--	.30	135	.11
31	.04	52	.01	--	--	--	.25	150	.10
TOTAL	2.48	--	1.93	23.63	--	22.48	13.91	--	11.12

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.24	163	.11	.68	76	.14	.27	167	.12
2	.23	168	.10	.66	72	.13	.26	183	.13
3	.23	166	.10	.58	69	.11	.24	194	.13
4	.21	159	.09	.50	65	.09	.22	202	.12
5	.20	141	.08	.50	63	.09	1.3	253	.89
6	.21	113	.06	.77	141	.29	.68	193	.35
7	.19	77	.04	1.9	185	.95	.53	176	.25
8	.19	46	.02	1.5	163	.66	1.6	217	.94
9	.16	32	.01	1.1	142	.42	.90	148	.36
10	.15	30	.01	.92	121	.30	.66	113	.20
11	.14	30	.01	.84	101	.23	.61	93	.15
12	.14	31	.01	.80	80	.17	.97	92	.24
13	.13	31	.01	.73	58	.11	.90	123	.30
14	.12	31	.01	.71	43	.08	4.2	150	1.7
15	.11	30	.01	.64	56	.10	2.7	119	.87
16	1.9	3250	17	.65	69	.12	1.5	106	.43
17	.91	440	1.1	.61	72	.12	1.2	87	.28
18	.62	420	.70	.56	73	.11	.94	77	.20
19	.50	410	.55	.50	73	.10	.96	140	.40
20	.44	400	.48	.47	73	.09	1.1	146	.43
21	1.6	1350	5.8	.44	73	.09	.92	113	.28
22	1.1	213	.63	.43	73	.08	.78	109	.23
23	.79	140	.30	.41	73	.08	.70	106	.20
24	.64	123	.21	.42	73	.08	.61	105	.17
25	.56	112	.17	.41	73	.08	.57	104	.16
26	.49	103	.14	.42	73	.08	.54	104	.15
27	.47	95	.12	.42	72	.08	.60	137	.22
28	.53	88	.12	.43	76	.09	.68	147	.27
29	.50	83	.11	.55	115	.17	.63	121	.21
30	.58	79	.12	.53	133	.19	.58	112	.18
31	--	--	--	.35	149	.14	--	--	--
TOTAL	14.25	--	28.22	20.43	--	5.57	28.35	--	10.56

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.52	104	.15	4.6	90	1.1	.58	99	.16
2	.48	97	.13	44	273	32	.56	100	.15
3	.45	90	.11	2.7	167	1.2	.56	101	.15
4	.42	82	.09	2.0	98	.53	.54	98	.14
5	.38	74	.08	5.5	116	1.7	.52	93	.13
6	.36	67	.07	4.4	163	1.9	.49	87	.12
7	.34	59	.05	3.7	135	1.3	.77	118	.25
8	.33	51	.05	3.6	116	1.1	.57	108	.17
9	.32	43	.04	2.3	110	.68	.51	97	.13
10	.31	40	.03	1.9	107	.55	.75	136	.28
11	.30	69	.06	2.3	200	1.2	1.2	141	.46
12	5.2	145	2.0	4.3	126	1.5	.85	114	.26
13	1.9	157	.81	3.3	113	1.0	.71	110	.21
14	.87	144	.34	2.6	105	.74	.61	106	.17
15	.73	129	.25	2.0	99	.53	.54	102	.15
16	.61	119	.20	1.6	95	.41	.47	97	.12
17	2.0	139	.75	1.4	92	.35	.41	94	.10
18	2.9	128	1.0	1.2	87	.28	.36	92	.09
19	1.7	110	.50	1.0	83	.22	.34	89	.08
20	1.6	102	.44	.96	79	.20	.37	95	.09
21	.79	94	.20	.88	76	.18	.32	103	.09
22	.68	87	.16	.82	72	.16	.29	96	.08
23	.62	78	.13	.79	71	.15	.29	90	.07
24	.56	72	.11	.74	70	.14	.29	83	.06
25	.50	64	.09	.85	114	.26	.28	78	.06
26	.79	83	.18	.78	118	.25	.43	155	.18
27	.91	94	.23	.72	115	.22	.30	134	.11
28	.88	85	.20	.65	112	.20	.30	117	.09
29	.83	77	.17	.61	108	.18	.27	99	.07
30	.75	68	.14	.57	104	.16	.32	81	.07
31	.80	60	.13	.55	99	.15	--	--	--
TOTAL	29.83	--	8.89	103.32	--	50.54	14.80	--	4.29

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	258.82
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	146.16

05464133 HALF MILE CREEK NEAR GLADBROOK, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM
JAN.										
04...	.0	1	.06	--	--	--	--	--	--	--
APR.										
04...	2.0	1	.23	--	--	--	--	--	--	--
16...	6.0	--	9.1	6500	160	39	41	47	66	90

DATE	SUS. SED. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
JAN.									
04...	--	10	10	21	60	93	96	99	100
APR.									
04...	--	18	22	29	55	91	93	99	100
16...	99	--	--	--	--	--	--	--	--

05464137 FOURMILE CREEK NEAR TRAER, IOWA

LOCATION.--Lat 42°12'06", long 92°33'44", near center of sec.2, T.85 N., R.15 W., Tama County, 10 ft upstream from gaging station on bridge on county highway T69, 2 miles upstream from mouth, and 5.0 miles northwest of Traer.
DRAINAGE AREA.--19.51 sq mi.
PERIOD OF RECORD.--Specific conductance: October 1969 to current year (partial-record station).
Water temperatures: October 1969 to current year (partial-record station).
Sediment records: October 1969 to current year.
EXTREMES.--Current year: Sediment concentrations: Maximum daily, 2,350 mg/l June 14; minimum daily, 35 mg/l Nov. 30.
Sediment discharge: Maximum daily, 1,850 tons June 14; minimum daily, 0.03 ton Oct. 9.

Period of record: Sediment concentrations: Maximum daily, 2,350 mg/l June 14, 1972; minimum daily, 23 mg/l May 2, 6-8, 1970.
Sediment discharge: Maximum daily, 2,060 tons Mar. 13, 1971; minimum daily, 0.03 ton Oct. 9, 1971.
REMARKS.--Flow affected by ice Nov. 21 to Dec. 8, Dec. 12 to Mar. 4.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	490	---	---	---	---	---	---	---	---	---	280	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	500	---	---	500	---	520	---	---	---
5	---	---	410	---	420	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	480	---	---	---	190	---	500	---	---	---	---
8	---	---	---	450	---	---	---	---	---	---	490	---
9	490	---	---	---	---	---	450	---	---	510	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	270	---	---	620	580	330	515
12	---	---	470	480	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	400	---	---	470	---	---	490	---	---	---	---
15	---	---	480	---	---	---	---	470	---	---	---	---
16	---	---	---	---	---	---	450	---	---	500	---	---
17	490	---	---	---	---	460	---	---	---	---	---	---
18	530	---	---	---	---	---	---	---	580	---	---	---
19	---	---	---	---	---	---	---	---	490	---	---	470
20	---	---	---	---	490	---	---	---	450	---	---	---
21	---	480	---	---	---	---	---	500	---	---	---	---
22	---	---	430	500	470	---	---	---	---	---	450	---
23	---	---	---	---	---	---	500	---	---	500	---	---
24	430	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	460	---	---	490	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	400	---	---	---	---	---	450	---	---	---	460
29	---	---	---	420	410	---	---	---	480	---	430	---
30	---	430	---	---	---	---	480	---	---	510	---	---
31	490	---	420	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	463											

05464137 FOURMILE CREEK NEAR TRAER, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	22.0	---	---	---	---	---	---	---	---	---	19.0	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	0.0	---	---	6.0	---	26.0	---	---	---
5	---	---	1.5	---	0.0	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	0.5	---	---	---	0.5	---	7.0	---	---	---	---
8	---	---	---	2.0	---	---	---	---	---	---	16.0	---
9	24.5	---	---	---	---	---	9.5	---	---	24.5	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	1.5	---	---	16.5	22.0	18.0	18.5
12	---	---	2.0	1.0	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	9.0	---	---	0.0	---	---	11.0	---	---	---	---
15	---	---	0.5	---	---	---	---	20.0	---	---	---	---
16	---	---	---	---	---	---	9.0	---	---	23.5	---	---
17	21.0	---	---	---	---	9.0	---	---	---	---	---	---
18	17.0	---	---	---	---	---	---	---	18.5	---	---	---
19	---	---	---	---	---	---	---	---	18.0	---	---	23.5
20	---	---	---	---	0.0	---	---	---	14.5	---	---	---
21	---	0.5	---	---	---	---	---	19.5	---	---	---	---
22	---	---	1.0	0.0	0.0	---	---	---	---	---	20.0	---
23	---	---	---	---	---	---	10.0	---	---	25.5	---	---
24	4.5	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	0.5	---	---	3.5	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	1.5	---	---	---	---	---	18.0	---	---	---	16.5
29	---	---	---	0.0	1.0	---	---	---	24.0	---	20.0	---
30	---	2.0	---	---	---	---	13.5	---	---	26.0	---	---
31	13.0	---	0.5	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	11.0											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-18-71	1125	0.10	530.	17.0	8.1
11-30-71	1120	0.32	*****	2.0	***
01-04-72	1120	0.64	*****	0.0	***
02-22-72	1035	1.4	500.	0.0	[illegible]
04-04-72	1333	3.3	*****	6.0	***
05-15-72	1520	11.	470.	****	[illegible]
08-08-72	1130	37.	*****	16.0	***
09-11-72	1200	10.	540.	18.5	[illegible]

05464137 FOURMILE CREEK NEAR TRAER, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.36	77	.07	4.6	170	2.1	.84	38	.09
2	.41	115	.13	9.4	189	4.8	.72	50	.10
3	.23	119	.07	2.9	110	.86	.66	62	.11
4	.27	103	.08	2.0	93	.50	1.0	73	.20
5	.26	90	.06	1.5	86	.35	1.2	83	.27
6	.25	78	.05	1.0	79	.21	1.5	86	.35
7	.29	67	.05	1.1	72	.21	2.0	91	.49
8	.26	55	.04	1.2	77	.25	2.5	95	.64
9	.29	43	.03	1.3	82	.29	3.1	99	.83
10	.36	43	.04	1.1	88	.26	9.4	176	5.3
11	.41	45	.05	.90	94	.23	8.3	156	3.5
12	.43	48	.06	1.0	102	.28	4.7	114	1.4
13	.36	49	.05	1.0	109	.29	3.5	104	.98
14	.50	52	.07	1.1	116	.34	3.0	97	.79
15	.45	57	.07	1.0	117	.32	3.5	89	.84
16	.35	61	.06	1.1	118	.35	2.5	83	.56
17	.22	65	.04	1.1	119	.35	2.0	80	.43
18	.28	77	.06	1.4	120	.45	2.2	76	.45
19	.22	79	.05	1.2	122	.40	2.3	72	.45
20	.36	82	.08	.97	123	.32	2.0	68	.37
21	.39	84	.09	.80	142	.31	1.7	64	.29
22	.33	87	.08	.60	116	.19	1.5	62	.25
23	.32	89	.08	.64	138	.24	1.8	66	.32
24	.31	93	.08	.70	126	.24	1.9	72	.37
25	.29	94	.07	.80	107	.23	1.5	77	.31
26	.30	97	.08	1.1	92	.27	1.4	80	.30
27	.68	98	.18	1.2	76	.25	1.2	80	.26
28	.57	99	.15	1.1	59	.18	1.0	80	.22
29	.53	111	.16	1.2	47	.15	1.1	81	.24
30	1.5	140	.57	1.1	35	.10	1.2	80	.26
31	1.3	126	.44	--	--	--	1.3	83	.29
TOTAL	13.08	--	3.19	46.11	--	15.32	72.52	--	21.26

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1.0	92	.25	.94	60	.15	70	335	63
2	.80	103	.22	.93	56	.14	25	350	24
3	.70	114	.22	.91	55	.14	15	230	9.3
4	.64	117	.20	.90	64	.16	9.0	245	6.0
5	.60	95	.15	.90	78	.19	5.4	210	3.1
6	.66	52	.09	.94	95	.24	99	480	284
7	.80	37	.08	.96	103	.27	151	572	254
8	1.2	62	.20	1.0	106	.29	35	360	34
9	1.9	92	.47	1.0	105	.28	10	280	7.6
10	4.0	117	1.3	1.1	103	.31	8.2	225	5.0
11	3.1	62	.52	1.1	97	.29	21	218	12
12	2.5	61	.41	1.1	88	.26	8.9	150	3.6
13	1.5	60	.24	1.1	77	.23	12	146	4.7
14	.90	58	.14	1.2	64	.21	6.0	162	2.6
15	.48	57	.07	1.2	54	.17	11	162	4.8
16	.40	52	.06	1.2	51	.17	8.1	191	4.2
17	.35	46	.04	1.3	74	.26	5.5	155	2.3
18	6.0	116	1.9	1.2	87	.28	3.7	132	1.3
19	3.5	130	1.2	1.2	81	.26	3.5	117	1.1
20	2.5	114	.77	1.3	71	.25	3.7	107	1.1
21	2.1	108	.61	1.3	61	.21	4.4	115	1.4
22	1.8	102	.50	1.3	56	.20	5.3	141	2.0
23	1.6	95	.41	1.4	64	.24	3.4	131	1.2
24	1.5	90	.36	1.5	88	.36	3.1	115	.96
25	1.3	86	.30	1.6	109	.47	3.0	103	.83
26	1.2	81	.26	2.0	118	.64	3.0	98	.79
27	1.2	77	.25	1.4	112	.42	3.6	101	.98
28	1.1	74	.22	55	305	45	4.3	109	1.3
29	1.0	70	.19	150	580	235	4.6	117	1.5
30	1.0	66	.18	--	--	--	3.8	114	1.2
31	.96	63	.16	--	--	--	3.4	109	1.0
TOTAL	48.29	--	11.97	236.98	--	287.09	552.9	—	740.86

05464137 FOURMILE CREEK NEAR TRAER, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	APRIL			MAY			JUNE		
	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.3	105	.94	12	69	2.2	5.3	180	2.6
2	3.1	100	.84	14	79	3.0	5.1	182	2.5
3	3.1	96	.80	16	85	3.7	4.9	184	2.4
4	2.9	91	.71	15	85	3.4	4.6	185	2.3
5	3.0	89	.72	14	82	3.1	19	281	14
6	3.1	86	.72	16	115	5.0	26	288	20
7	3.2	83	.72	32	275	24	17	231	11
8	2.7	76	.55	30	162	13	30	274	22
9	2.8	69	.52	25	100	6.8	26	236	17
10	2.8	63	.48	24	81	5.2	22	188	11
11	2.8	58	.44	23	76	4.7	16	158	6.8
12	3.0	54	.44	20	74	4.0	36	1100	107
13	3.2	51	.44	17	70	3.2	43	1100	128
14	2.9	48	.38	12	66	2.1	291	2350	1850
15	2.9	46	.36	12	55	1.8	63	400	68
16	22	475	33	11	54	1.6	38	370	38
17	21	421	24	9.9	54	1.4	31	310	26
18	16	332	14	8.9	58	1.4	26	280	20
19	13	284	10	8.3	72	1.6	55	1400	208
20	10	252	6.8	7.7	90	1.9	52	1300	183
21	20	230	12	7.0	112	2.1	27	330	24
22	22	214	13	6.6	126	2.2	23	263	16
23	14	202	7.6	6.3	131	2.2	20	233	13
24	13	181	6.4	6.8	131	2.4	18	218	11
25	12	149	4.8	6.8	133	2.4	17	210	9.6
26	10	110	3.0	6.5	143	2.5	15	204	8.3
27	8.2	68	1.5	6.3	157	2.7	14	202	7.6
28	8.2	42	.93	6.2	164	2.7	21	288	16
29	9.0	44	1.1	6.0	168	2.7	17	238	11
30	9.8	55	1.5	5.8	173	2.7	12	215	7.0
31	--	--	--	5.5	178	2.6	--	--	--
TOTAL	253.0	--	148.69	397.6	--	120.3	994.9	--	2863.1

DAY	JULY			AUGUST			SEPTEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11	205	6.1	20	420	23	8.1	127	2.8
2	10	196	5.3	150	1370	555	7.8	127	2.7
3	9.8	187	4.9	35	680	64	7.5	126	2.6
4	9.2	180	4.5	24	460	30	7.3	124	2.4
5	9.0	175	4.3	34	510	47	7.1	123	2.4
6	8.9	168	4.0	108	1070	312	6.7	121	2.2
7	8.4	162	3.7	38	430	44	12	158	5.1
8	8.3	154	3.5	35	260	25	9.3	147	3.7
9	8.2	147	3.3	26	202	14	8.0	142	3.1
10	8.1	138	3.0	21	148	8.4	9.3	140	3.5
11	7.6	117	2.4	28	139	11	15	155	6.3
12	25	257	17	59	207	33	14	150	5.7
13	13	188	6.6	42	236	27	11	144	4.3
14	11	136	4.3	26	173	12	10	138	3.7
15	10	108	2.9	21	147	8.3	9.6	132	3.4
16	8.8	86	2.0	18	145	7.0	8.9	125	3.0
17	24	163	11	16	145	6.3	7.9	120	2.6
18	24	195	13	14	144	5.4	7.3	113	2.2
19	15	151	6.1	13	143	5.0	7.0	104	2.0
20	13	130	4.6	12	141	4.6	7.1	98	1.9
21	11	116	3.4	11	139	4.1	6.7	98	1.8
22	9.6	107	2.8	10	138	3.7	6.3	98	1.7
23	8.9	100	2.4	10	137	3.7	6.3	98	1.7
24	8.0	96	2.1	9.9	134	3.6	6.3	97	1.6
25	7.3	92	1.8	10	150	4.1	6.5	105	1.8
26	12	152	4.9	10	146	3.9	9.0	126	3.1
27	9.8	136	3.6	9.6	139	3.6	7.9	127	2.7
28	8.8	110	2.6	8.9	134	3.2	8.8	140	3.3
29	7.9	94	2.0	8.3	128	2.9	11	162	4.8
30	7.0	83	1.6	7.8	128	2.7	8.4	130	2.9
31	6.5	76	1.3	7.5	128	2.6	--	--	--
TOTAL	339.0	--	140.7	843.0	--	1280.1	258.1	--	91.0

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	4055.48
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	5723.58

05464137 FOURMILE CREEK NEAR TRAER, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMP-ERATURE (DEG C)	NUMBER OF SAM-PLING POINTS	DIS-CHARGE (CFS)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM
JAN.										
04...	.0	1	.64	19	20	26	81	96	99	100
APR.										
04...	6.0	1	3.3	9	11	19	64	96	99	100

05469720 MISSISSIPPI RIVER AT BURLINGTON, IOWA

LOCATION.--Lat 40°49'22", long 91°05'52", in NW1/4 NW1/4 sec.33, T.70 N., R.2 W., Des Moines County, at lowhead pumping station of Burlington Municipal Water Department, and at mile 1,358.0.

DRAINAGE AREA.--114,000 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: October 1969 to current year.

REMARKS.--Water discharge furnished by District Office, Corps of Engineers, Rock Island, Illinois. Station operated by EPA during period October 1957 to September 1969.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)
OCT.								
15...	27000	--	--	157	32	14	--	.95
NOV.								
04...	64000	--	--	141	29	14	--	1.0
DEC.								
09...	--	8.8	2.1	131	30	12	.2	.46
09...	55000	--	--	--	--	--	--	--
JAN.								
06...	--	--	--	151	37	16	--	1.1
06...	31000	--	--	--	--	--	--	--
FEB.								
11...	--	--	--	176	41	18	--	.66
11...	31000	--	--	--	--	--	--	--
MAR.								
10...	--	--	--	113	27	12	--	1.9
10...	56000	--	--	--	--	--	--	--
APR.								
13...	--	--	--	120	31	12	--	1.4

DATE	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	DIS-SOL-VED-PHOS-PHORUS (P) (MG/L)	HARD-NESS (CA,MG) (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)
OCT.									
15...	.09	.2	.29	.14	190	--	--	--	--
15...	--	--	--	--	--	--	--	420	8.3
NOV.									
04...	.08	.4	.35	.14	180	--	--	--	--
04...	--	--	--	--	--	--	--	370	8.1
DEC.									
09...	.11	1.0	.24	.16	160	11	.3	--	--
09...	--	--	--	--	--	--	--	370	8.2
JAN.									
06...	.16	1.8	.30	.24	200	--	--	--	--
06...	--	--	--	--	--	--	--	420	7.8
FEB.									
11...	.39	1.3	.18	.14	210	--	--	--	--
11...	--	--	--	--	--	--	--	470	7.4
MAR.									
10...	2.0	1.0	.48	.22	180	--	--	--	--
10...	--	--	--	--	--	--	--	260	7.6
APR.									
06...	--	--	--	--	--	--	--	--	--
13...	.48	1.6	.35	.14	150	--	--	--	--

05469720 MISSISSIPPI RIVER AT BURLINGTON, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TOTAL PHOS- PHORUS (P) (MG/L)	DIS- SOL- VED- PHOS- PHORUS (P) (MG/L)	HARD- NESS (CA,MG) (MG/L)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (JTU)
APR.										
13...	--	--	--	--	--	340	8.2	9.0	--	--
20...	--	--	--	--	--	--	--	11.5	--	--
27...	--	--	--	--	--	--	--	10.5	--	--
MAY										
04...	.45	.11	150	--	--	--	--	12.0	25	50
04...	--	--	--	--	--	300	7.6	12.0	--	--
11...	--	--	--	--	--	--	--	12.0	--	--
18...	--	--	--	--	--	--	--	18.5	--	--
25...	--	--	--	--	--	--	--	24.0	--	--
JUNE										
01...	--	--	--	--	--	--	--	21.5	--	--
08...	--	--	--	--	--	--	--	23.5	--	--
15...	.65	.17	230	8	.3	--	--	23.0	20	95
15...	--	--	--	--	--	420	8.2	23.0	--	--
22...	--	--	--	--	--	--	--	23.0	--	--
29...	--	--	--	--	--	--	--	24.0	--	--
JULY										
06...	--	--	--	--	--	--	--	24.5	--	--
13...	--	--	--	--	--	--	--	24.5	--	--
20...	--	--	--	--	--	--	--	25.0	--	--
26...	.35	--	--	--	--	--	--	28.0	--	30
26...	--	--	--	--	--	450	7.9	28.0	--	--
27...	--	--	--	--	--	--	--	28.5	--	--
28...	--	--	--	--	--	--	--	26.0	--	--
29...	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--
AUG.										
03...	--	--	--	--	--	--	--	25.0	--	--
10...	--	--	--	--	--	--	--	22.0	--	--
17...	--	--	--	--	--	--	--	26.0	--	--
23...	.32	--	--	--	--	--	--	27.5	--	30
23...	--	--	--	--	--	370	7.9	27.5	--	--
31...	--	--	--	--	--	--	--	25.0	--	--
SEP.										
07...	--	--	--	--	--	--	--	23.5	--	--
14...	--	--	--	--	--	--	--	23.0	--	--
20...	.53	--	--	--	--	--	--	24.5	--	80
20...	--	--	--	--	--	340	7.8	24.5	--	--
28...	--	--	--	--	--	--	--	21.0	--	--

DATE	DIS- SOLVED OXYGEN (MG/L)	PER- CENT SATUR- ATION	BIO- CHEM- ICAL OXYGEN DEMAND (MG/L)	FECAL COLI- FORM (COL. PER 100 ML)	IMME- DIATE COLI- FORM (COL. PER 100 ML)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	ALDRIN (UG/L)	CHLOR- DANE (UG/L)	DDD (UG/L)	DDE (UG/L)
APR.										
13...	10.4	91	3.9	--	3800	--	--	--	--	--
MAY										
04...	--	--	--	--	--	.23	--	--	--	--
04...	9.8	98	4.2	--	4600	--	--	--	--	--
JUNE										
15...	--	--	--	--	--	.09	--	--	--	--
15...	5.6	66	3.6	--	15000	--	--	--	--	--
JULY										
26...	--	--	--	--	--	--	.00	.0	.00	.00
26...	--	--	7.6	55000	--	--	--	--	--	--
27...	6.0	--	--	--	--	--	--	--	--	--
28...	5.6	--	--	--	--	--	--	--	--	--
29...	6.7	--	--	--	--	--	--	--	--	--
30...	6.1	--	--	--	--	--	--	--	--	--
AUG.										
23...	5.9	76	3.8	2200	--	--	--	--	--	--
SEP.										
20...	6.3	75	2.3	1300	--	--	--	--	--	--

DATE	DDT (UG/L)	DI- ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA- CHLOR (UG/L)	HEPTA- CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
JULY									
26...	.00	.01	.00	.00	.00	.00	.00	.02	.00

05469720 MISSISSIPPI RIVER AT BURLINGTON, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMP-ERATURE (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	IMME-DIATE COLI-FORM (COL. PER 100 ML)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
OCT.								
07...	19.5	--	--	--	--	--	--	--
15...	--	10	25	--	--	--	--	.13
15...	15.0	--	--	9.6	91	3.5	1200	--
21...	18.0	--	--	--	--	--	--	--
28...	18.0	--	--	--	--	--	--	--
NOV.								
04...	11.5	20	40	--	--	--	--	.11
04...	7.0	--	--	9.0	78	5.0	8200	--
11...	6.5	--	--	--	--	--	--	--
18...	9.5	--	--	--	--	--	--	--
26...	6.5	--	--	--	--	--	--	--
DEC.								
02...	3.5	--	--	--	--	--	--	--
09...	3.0	40	9	--	--	--	--	.05
09...	3.0	--	--	11.7	89	4.4	6600	--
16...	3.0	--	--	--	--	--	--	--
23...	1.5	--	--	--	--	--	--	--
30...	1.5	--	--	--	--	--	--	--
JAN.								
06...	1.0	45	7	--	--	--	--	.07
06...	1.0	--	--	13.6	98	3.6	3500	--
13...	1.0	--	--	--	--	--	--	--
20...	1.0	--	--	--	--	--	--	--
27...	1.0	--	--	--	--	--	--	--
FEB.								
03...	1.0	--	--	--	--	--	--	--
11...	.5	30	2	--	--	--	--	.08
11...	.5	--	--	12.0	85	4.0	9600	--
17...	3.5	--	--	--	--	--	--	--
24...	1.5	--	--	--	--	--	--	--
MAR.								
02...	4.0	--	--	--	--	--	--	--
10...	1.5	30	25	--	--	--	--	.14
10...	1.5	--	--	11.4	83	7.1	1200	--
16...	5.0	--	--	--	--	--	--	--
23...	5.5	--	--	--	--	--	--	--
30...	5.0	--	--	--	--	--	--	--
APR.								
06...	4.0	--	--	--	--	--	--	--
13...	9.0	25	30	--	--	--	--	.06

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)
APR.										
13...	103000	--	--	--	--	--	--	--	--	--
MAY										
04...	--	--	--	108	29	8.0	--	1.7	.10	2.0
04...	179000	--	--	--	--	--	--	--	--	--
JUNE										
15...	--	9.2	2.7	151	47	14	.2	2.2	.30	2.4
15...	109000	--	--	--	--	--	--	--	--	--
JULY										
26...	54000	7.8	--	--	43	14	--	--	.04	2.8
AUG.										
23...	87000	6.8	--	--	28	16	--	--	.23	1.2
SEP.										
20...	--	7.2	--	--	26	16	--	--	.35	1.6
20...	74000	--	--	--	--	--	--	--	--	--

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA

LOCATION.--Lat 41°40'50", long 93°40'07", near center of sec.5, T.79 N., R.24 W., Polk County, near center of span on upstream side of bridge on county highway F42, 30 ft upstream from gaging station, 2.0 miles west of Saylorville, 2.1 miles downstream from Rock Creek, 2.4 miles upstream from Beaver Creek, and at mile 211.6.

DRAINAGE AREA.--5,841 sq mi.

PERIOD OF RECORD.--Specific conductance: December 1967 to September 1971, October 1971 to September 1972 (partial-record station).

Water temperatures: October 1961 to September 1971, October 1971 to September 1972 (partial-record station).

Sediment records: October 1961 to current year.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 1,100 mg/l Sept. 28; minimum daily, 6 mg/l Feb. 9, 23, 24.

Sediment discharge: Maximum daily, 28,100 tons Aug. 8; minimum daily, 2.9 tons Oct. 18.

Period of record: Specific conductance (1967-71): Maximum daily, 1,350 micromhos Jan. 19-21, 1968; minimum daily, 90 micromhos Feb. 19, 1971.

Water temperatures (1967-71): Maximum, 36.0°C June 29, 1971; freezing point on many days during winter months each year.

Sediment concentrations: Maximum daily, 5,400 mg/l May 14, 1970; minimum daily, 1 mg/l Jan. 8, 1965.

Sediment discharge: Maximum daily, 148,000 tons June 12, 1966; minimum daily, 1 ton Jan. 8, 1965, Feb. 8-12, 23, 1967.

REMARKS.--Flow affected by ice Dec. 13 to Mar. 9.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	780	---	---	---	---	---	720	640	---	690	---
2	---	780	---	---	850	---	---	---	700	---	---	---
3	---	---	---	---	---	---	700	740	---	---	---	---
4	770	---	---	780	---	---	---	750	---	---	---	---
5	---	---	---	---	---	---	710	700	---	670	---	---
6	---	---	---	---	---	---	710	---	---	---	---	---
7	---	---	---	---	---	---	720	---	---	---	---	---
8	---	770	---	---	---	400	---	850	430	---	---	600
9	---	---	---	---	---	400	---	600	---	---	570	---
10	---	---	---	---	---	400	---	700	---	---	---	650
11	800	---	---	790	---	---	620	700	---	---	---	620
12	800	---	---	---	---	---	600	720	700	700	---	600
13	810	---	---	---	---	450	600	---	---	---	---	---
14	---	---	---	---	---	---	700	---	---	---	---	520
15	810	800	---	---	---	440	600	720	---	---	---	---
16	---	770	900	---	---	440	---	750	---	---	---	510
17	---	780	---	---	---	420	600	720	---	---	---	530
18	810	---	---	---	---	---	590	730	---	---	---	---
19	810	---	---	---	---	---	---	670	---	---	---	540
20	810	---	---	---	---	440	600	---	---	---	---	550
21	830	---	---	---	---	470	---	---	---	---	---	570
22	---	---	---	---	---	480	---	740	780	---	---	600
23	---	---	---	---	920	500	600	---	---	---	---	---
24	780	---	---	---	---	580	650	790	---	---	---	670
25	800	---	---	---	---	---	600	750	---	---	---	---
26	800	---	---	---	---	---	---	---	---	---	---	670
27	---	---	---	---	---	620	---	---	---	---	---	680
28	---	---	---	---	---	---	---	770	---	---	---	---
29	---	---	---	---	---	620	---	---	---	---	---	600
30	---	---	---	---	---	650	---	---	---	---	590	500
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	665											

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	20.0	---	---	---	---	---	13.5	20.5	---	23.5	---
2	---	18.0	---	---	0.0	---	---	---	19.0	---	---	---
3	---	---	---	---	---	---	2.0	12.0	---	---	---	---
4	14.5	---	---	0.0	---	---	---	13.5	---	---	---	---
5	---	---	---	---	---	---	4.5	13.5	---	20.5	---	---
6	---	---	---	---	---	---	5.5	---	---	---	---	---
7	---	---	---	---	---	---	6.5	---	---	---	---	---
8	---	3.0	---	---	---	3.5	---	12.0	24.0	---	---	20.5
9	---	---	---	---	---	3.5	---	12.0	---	---	20.0	---
10	---	---	---	---	---	3.5	---	12.0	---	---	---	20.5
11	26.0	---	---	0.0	---	---	11.0	12.0	---	---	---	21.0
12	28.0	---	---	---	---	---	11.0	13.5	18.0	---	---	20.5
13	26.0	---	---	---	---	4.0	11.0	---	---	---	---	---
14	---	---	---	---	---	---	6.5	---	---	---	---	23.0
15	---	12.0	---	---	---	5.0	11.0	14.5	---	---	---	---
16	---	15.0	0.5	---	---	2.5	---	15.5	---	---	---	18.0
17	---	18.0	---	---	---	4.0	11.5	16.5	---	---	---	23.5
18	26.0	---	---	---	---	---	13.0	18.0	---	---	---	---
19	26.0	---	---	---	---	---	---	18.5	---	---	---	23.5
20	26.0	---	---	---	---	5.5	13.0	---	---	---	---	24.0
21	26.0	---	---	---	---	5.0	---	---	---	---	---	20.0
22	---	---	---	---	---	6.5	---	21.0	18.0	---	---	18.5
23	---	---	---	---	0.0	6.0	11.0	---	---	---	---	---
24	26.0	---	---	---	---	5.5	12.0	21.0	---	---	---	19.5
25	24.0	---	---	---	---	---	10.0	21.0	---	---	---	---
26	24.0	---	---	---	---	---	---	---	---	---	---	19.0
27	---	---	---	---	---	5.5	---	---	---	---	---	16.0
28	---	---	---	---	---	---	---	21.0	---	---	---	---
29	---	---	---	---	---	5.5	---	---	---	---	---	15.0
30	---	---	---	---	---	5.5	---	---	---	---	24.5	15.0
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	14.5											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1325	206.	*****	15.5	***
10-25-71	1350	216.	*****	14.5	***
11-08-71	1445	620.	*****	3.0	***
12-16-71	1125	504.	900.	0.5	[illegible]
01-20-72	1030	302.	*****	1.0	***
02-01-72	1500	220.	*****	0.0	***
03-15-72	0940	2810.	430.	****	7.9
03-29-72	1430	2040.	*****	5.0	***
04-18-72	0930	1240.	*****	13.0	***
06-20-72	1300	3550.	*****	20.0	***
08-09-72	1655	12000.	*****	20.0	***
08-15-72	1430	2830.	*****	30.0	***
06-24-72	1015	1270.	*****	21.0	***
08-30-72	1455	1210.	550.	24.5	8.3

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCTOBER			NOVEMBER			DECEMBER		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	201	32	17	437	32	38	833	53	119
2	206	37	21	667	40	72	743	47	94
3	215	58	34	976	70	184	716	39	75
4	202	59	32	1050	95	269	716	32	62
5	199	53	28	926	96	240	824	52	116
6	176	45	21	812	85	186	844	71	162
7	189	44	22	727	67	132	855	71	164
8	191	45	23	647	45	79	871	71	167
9	191	39	20	583	33	52	856	70	162
10	203	34	19	520	27	38	795	67	144
11	217	25	15	510	27	37	747	66	133
12	196	21	11	565	62	95	671	62	112
13	184	22	11	519	107	150	560	47	71
14	196	23	12	508	94	129	400	76	82
15	176	24	11	478	78	101	450	65	79
16	166	20	9.0	446	87	105	560	76	115
17	161	14	6.1	447	94	113	600	214	347
18	153	7	2.9	490	86	114	500	210	284
19	160	17	7.3	558	81	122	450	182	221
20	154	47	20	800	83	179	470	158	201
21	191	34	18	1110	91	273	560	143	216
22	210	42	24	1260	101	344	600	144	233
23	204	45	25	1220	101	333	620	141	236
24	207	34	19	1130	96	293	600	125	203
25	211	15	8.5	1020	89	245	580	96	150
26	208	13	7.3	986	78	208	560	95	144
27	215	22	13	899	74	180	540	103	150
28	234	28	18	864	70	163	530	93	133
29	274	33	24	857	65	150	520	89	125
30	321	35	30	858	59	137	500	95	128
31	364	35	34	--	--	--	480	104	135
TOTAL	6375	--	563.1	22870	--	4761	19551	--	4763

DAY	JANUARY			FEBRUARY			MARCH		
	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	450	104	126	220	15	8.9	1200	187	606
2	420	93	105	220	10	5.9	1600	172	743
3	400	89	96	215	11	6.4	1700	151	693
4	390	81	85	215	15	8.7	1500	120	486
5	380	81	83	210	18	10	1400	80	302
6	370	92	92	210	18	10	1300	70	246
7	360	108	105	210	16	9.1	1500	125	506
8	350	129	122	205	11	6.1	1900	160	821
9	340	152	140	200	6	3.2	2000	81	437
10	340	176	162	205	8	4.4	1880	71	360
11	330	189	168	205	12	6.6	2090	145	818
12	330	189	168	205	19	11	2060	152	845
13	320	186	161	210	27	15	2200	174	1030
14	320	176	152	210	29	16	2120	169	967
15	320	160	138	215	28	16	2800	580	4380
16	320	142	123	220	24	14	2810	395	3000
17	320	121	105	220	21	12	3460	760	7100
18	310	98	82	220	30	18	3480	855	8030
19	310	78	65	220	34	20	3240	655	5730
20	300	63	51	220	31	18	3000	475	3850
21	300	53	43	220	25	15	2860	367	2830
22	290	46	36	230	15	9.3	2860	247	1910
23	290	41	32	230	6	3.7	2880	320	2490
24	280	36	27	230	6	3.7	2790	385	2900
25	280	31	23	250	14	9.5	2550	332	2290
26	270	27	20	260	22	15	2360	251	1600
27	260	24	17	280	23	17	2220	188	1130
28	250	23	16	350	67	63	2100	138	782
29	240	25	16	700	107	202	2020	100	545
30	230	24	15	--	--	--	1900	121	621
31	220	22	13	--	--	--	1800	125	608
TOTAL	9890	--	2587	7005	--	557.5	69580	--	58656

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1720	116	539	3020	510	4160	5820	390	6130
2	1630	104	458	3710	675	6760	4920	305	4050
3	1540	95	395	4910	870	11500	4350	245	2880
4	1510	88	359	5970	1060	17100	3970	224	2400
5	1500	84	340	6170	905	15100	3800	225	2310
6	1430	86	332	6300	815	13900	4400	351	4170
7	1380	90	335	7990	740	16000	6640	425	7620
8	1340	94	340	8730	675	15900	6040	353	5760
9	1310	98	347	7590	725	14900	5420	318	4650
10	1260	102	347	6580	630	11200	5080	300	4110
11	1240	108	362	5910	540	8620	4690	286	3620
12	1230	117	389	5420	450	6590	4500	270	3280
13	1200	114	369	5090	440	6050	4410	262	3120
14	1180	82	261	4860	435	5710	4990	317	4270
15	1170	114	360	4650	415	5210	6700	388	7020
16	1190	127	408	4380	320	3780	6220	382	6420
17	1240	134	449	4110	255	2830	5270	360	5120
18	1270	127	435	3920	272	2880	4380	340	4020
19	1260	118	401	3760	249	2530	3740	319	3220
20	1230	118	392	3610	230	2240	3590	302	2930
21	1230	115	382	3520	223	2120	3280	285	2520
22	1220	111	366	3370	220	2000	3000	239	1940
23	1280	150	518	3240	270	2360	2770	220	1650
24	1350	127	463	3150	330	2810	2590	212	1480
25	1480	134	535	3000	391	3170	2390	203	1310
26	1570	136	577	2850	362	2790	2250	235	1430
27	1590	123	528	3640	319	3140	2170	225	1320
28	1660	115	515	4240	281	3220	2080	207	1160
29	1820	215	1060	5180	258	3610	1990	205	1100
30	2110	360	2050	5710	235	3620	1890	193	985
31	--	--	--	6370	225	3870	--	--	--
TOTAL	42140	--	14612	150950	--	205670	123340	--	101995

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	1820	175	860	2440	244	1610	1080	109	318
2	1870	207	1050	4700	360	4570	1030	108	300
3	1970	281	1490	8180	653	14400	981	107	283
4	1960	295	1560	6730	449	8160	945	106	270
5	1860	218	1090	4670	335	4220	893	101	244
6	1750	159	751	4650	365	4580	852	99	228
7	1670	139	627	9390	590	15000	839	93	211
8	1620	130	569	11700	890	28100	1030	113	314
9	1600	128	553	11700	738	23300	1130	124	378
10	1750	230	1090	9500	525	13500	1120	140	423
11	1830	250	1240	7090	455	8710	1120	151	457
12	2060	272	1510	5650	417	6360	1340	200	724
13	2070	261	1460	4650	397	4980	1470	365	1450
14	1990	242	1300	3930	375	3980	1600	362	1560
15	2110	270	1540	3470	353	3310	2350	500	3170
16	2360	331	2110	2950	332	2640	2010	438	2380
17	2360	271	1730	2590	310	2170	1680	212	962
18	3200	361	3120	2290	286	1770	1480	148	591
19	6880	570	10600	2080	268	1510	1340	189	684
20	7320	620	12300	1670	250	1260	1250	136	459
21	6180	502	8380	1710	230	1060	1050	90	255
22	5140	450	6250	1590	212	910	898	110	267
23	4540	422	5170	1500	192	778	855	110	254
24	4280	400	4620	1360	172	632	810	95	208
25	3820	375	3870	1310	155	548	776	97	203
26	3480	352	3310	1280	138	477	800	146	315
27	3300	331	2950	1350	145	529	1770	320	1530
28	3000	317	2570	1520	192	788	3890	1100	11600
29	2710	299	2190	1460	160	631	4130	1090	12200
30	2560	280	1940	1300	120	421	4260	970	11200
31	2440	261	1720	1180	109	347	--	--	--
TOTAL	91500	--	89520	125790	--	161251	44779	--	53438

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	713770
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	698373.5

05481650 DES MOINES RIVER NEAR SAYLORVILLE, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
MAR. 16...	2.0	2	2810	28	46	55	83	96	98	100	--
APR. 18...	13.0	3	1280	--	1	8	51	85	93	98	100
JULY 12...	--	2	2120	7	50	88	98	100	--	--	--

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA

LOCATION.--Lat 41°14'41", long 93°16'08", in NW1/4 NW1/4 sec.3, T.74 N., R.21 W., Marion County, 15 ft upstream from gaging station on bridge on county highway, 0.5 mile downstream from Kirk Branch, and 1.7 miles northwest of Dallas.

DRAINAGE AREA.--342 sq mi.

PERIOD OF RECORD.--Chemical analysis: October 1968 to current year.
Water temperatures: October 1967 to current year.
Sediment records.--October 1967 to current year.

EXTREMES.--Current year: Specific conductance: Maximum daily, 760 micromhos Jan. 7, 8; minimum daily, 95 micromhos Aug. 3.
Water temperatures: Maximum, 24.0°C June 9, 28, July 12, 22, Aug. 15, Sept. 19; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 7,170 mg/l Apr. 22; minimum daily, 4 mg/l Dec. 26.
Sediment discharge: Maximum daily, 95,200 tons Sept. 12; minimum daily, 0.03 ton Oct. 9-12, 14, 15, 18, Jan. 25.

Period of record: Specific conductance: Maximum daily, 850 micromhos Jan. 17, 1970; minimum daily, 95 micromhos Aug. 3, 1972.
Water temperatures: Maximum, 28.0°C July 16, 1969; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 15,300 mg/l Apr. 5, 1969; minimum daily, 4 mg/l Jan. 5, 1970, Dec. 26, 1971.
Sediment discharge: Maximum daily, 103,000 tons Apr. 27, 1969; minimum daily, 0.02 ton Dec. 15, 16, 1968.

REMARKS.--Samples for chemical analysis are collected periodically. Flow affected by ice Dec. 9 to Mar. 10.

COOPERATION.--Laboratory analysis of chemical constituents furnished by State Hygienic Lab., Des Moines, Iowa.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C) WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	700	480	630	590	590	600	480	360	540	240	300
2	390	260	480	630	590	640	520	500	500	540	100	---
3	410	240	490	---	570	450	550	590	550	540	95	---
4	410	240	550	620	600	420	550	550	550	530	---	360
5	430	250	560	620	585	400	550	520	550	520	200	510
6	430	260	560	660	600	400	500	580	550	520	---	500
7	430	300	560	760	580	400	520	300	560	520	100	300
8	430	300	570	760	540	410	530	240	560	520	100	330
9	430	300	570	650	680	390	550	250	590	520	100	300
10	430	335	---	730	590	400	550	260	500	460	---	290
11	430	320	630	750	540	420	550	240	490	460	100	280
12	430	300	620	750	590	550	550	260	490	460	100	200
13	420	300	610	730	590	575	520	390	500	450	150	190
14	440	300	600	---	580	600	450	390	500	460	150	190
15	420	320	450	510	550	630	550	390	500	430	100	220
16	430	400	450	700	550	460	560	390	490	460	100	250
17	460	400	600	710	450	620	590	390	480	480	---	460
18	410	400	600	700	345	550	510	500	550	400	---	490
19	410	400	580	---	350	520	550	520	560	430	---	440
20	420	400	600	700	300	530	600	---	560	---	---	510
21	430	400	500	700	360	530	420	---	560	---	---	510
22	430	400	580	690	350	540	---	560	540	390	---	510
23	430	400	580	700	300	550	460	580	540	400	---	500
24	430	320	580	700	290	550	470	560	540	---	---	500
25	430	470	580	730	300	550	520	500	540	330	---	500
26	450	480	580	710	390	580	520	520	530	150	---	290
27	450	480	580	700	390	580	520	540	530	250	---	290
28	440	490	590	700	330	530	520	540	380	280	470	300
29	440	480	620	710	360	580	520	---	540	290	510	510
30	450	480	580	---	---	580	520	---	530	400	500	---
31	450	---	610	645	---	480	---	300	---	330	490	---
MONTH	429	371	565	689	477	516	528	439	521	431	---	371
YEAR	471											

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	9.5	0.0	0.0	0.0	0.0	0.0	12.0	16.5	22.0	21.0	19.0
2	18.0	5.5	0.0	0.0	0.0	0.0	0.0	10.0	19.0	22.0	19.5	---
3	14.5	8.0	0.0	0.0	0.0	0.0	1.0	9.0	18.5	21.0	18.5	---
4	13.5	3.5	0.0	0.0	0.0	0.0	0.0	11.0	19.0	21.0	16.5	16.5
5	13.0	4.5	0.5	0.0	0.0	0.0	1.0	11.0	20.0	21.0	17.0	16.0
6	15.0	1.0	1.5	0.0	0.0	0.0	3.0	13.0	22.0	20.5	19.0	16.5
7	13.5	0.0	1.5	0.0	0.0	0.0	0.0	13.0	22.0	20.0	18.0	16.0
8	13.0	0.0	2.0	0.0	0.0	0.0	0.0	11.0	23.5	19.0	17.0	15.5
9	10.0	0.0	1.5	0.0	0.0	0.0	1.5	13.0	24.0	21.0	16.5	15.5
10	10.0	2.5	---	0.0	0.0	0.0	4.0	12.0	18.5	23.0	17.0	17.0
11	8.5	0.0	0.0	0.0	0.0	0.0	4.5	13.0	21.0	23.5	16.5	18.5
12	9.0	3.5	0.0	0.0	0.0	0.0	3.5	13.5	21.0	24.0	18.5	18.5
13	10.0	4.5	0.0	0.0	0.0	1.0	4.5	11.0	22.0	23.5	20.0	19.0
14	9.0	7.0	0.0	---	0.0	0.0	7.0	14.5	21.0	23.5	21.0	17.0
15	10.0	8.0	0.0	0.0	0.0	0.0	5.5	14.0	20.5	21.0	24.0	15.5
16	12.0	9.0	0.0	0.0	0.0	0.0	8.5	15.0	18.5	21.0	21.0	17.0
17	14.5	9.0	0.0	0.0	0.0	0.0	12.0	15.5	18.0	21.0	---	22.0
18	15.0	7.0	0.0	---	0.0	0.0	9.0	18.0	19.0	19.5	---	23.5
19	15.5	3.5	0.0	---	0.0	1.5	10.0	19.0	19.5	21.0	---	24.0
20	14.5	2.0	0.0	0.0	0.0	1.5	8.0	---	18.5	---	---	23.0
21	15.5	1.5	0.0	0.0	0.0	1.5	8.0	---	18.0	---	---	20.0
22	15.0	0.0	0.0	0.0	0.0	1.5	7.0	19.5	19.5	24.0	---	15.5
23	14.5	0.0	0.0	0.0	0.0	0.5	8.0	20.0	---	22.0	---	14.0
24	13.5	0.0	0.0	0.0	0.0	0.5	6.5	19.0	20.0	---	---	19.0
25	13.5	1.0	0.0	0.0	0.0	1.0	6.0	21.0	20.5	22.0	---	19.5
26	14.5	1.5	0.0	0.0	0.0	1.5	10.0	22.0	21.0	21.0	---	18.5
27	14.5	1.0	0.0	0.0	0.0	1.5	10.0	22.0	22.0	20.0	---	18.0
28	12.0	0.5	0.0	0.0	0.0	1.0	11.0	20.0	24.0	20.0	20.5	16.5
29	12.0	0.0	0.0	0.0	0.0	0.0	11.0	---	23.0	19.0	19.0	15.0
30	11.0	0.0	0.0	---	---	0.0	13.0	16.5	22.0	21.0	18.5	10.0
31	10.0	---	0.0	0.0	---	0.0	---	15.5	---	21.0	18.5	---
MONTH	13.0	3.0	0.0	0.0	0.0	0.5	6.0	15.0	20.5	21.5	---	17.5
YEAR	9.5											

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	IRON (FE) (UG/L)	PHOS-PHATE (PO4) (MG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
MAY										
10...	550	12	2.1	120	.07	210	50	11	9.0	5.5

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS_ SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
MAY										
10...	143	0	117	69	6.0	.2	11	880	1.20	1310

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
MAY									
10...	172	55	10	.3	390	7.3	11.5	48	<.10

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.98	51	.13	128	620	214	8.8	32	.76
2	1.2	102	.33	627	875	1480	7.0	40	.76
3	1.1	54	.16	250	1020	689	5.6	56	.85
4	1.1	67	.20	90	1020	248	5.6	36	.54
5	1.4	88	.33	35	425	40	6.7	35	.63
6	1.2	42	.14	17	177	8.1	7.3	35	.69
7	.25	87	.06	9.4	227	5.8	8.7	37	.87
8	.17	92	.04	6.1	143	2.4	9.3	28	.70
9	.14	88	.03	4.2	153	1.7	7.0	5	.09
10	.14	87	.03	3.4	156	1.4	13	48	1.7
11	.14	73	.03	3.1	102	.85	30	86	7.0
12	.14	75	.03	3.1	45	.38	35	82	7.7
13	.17	92	.04	2.7	44	.32	27	83	6.1
14	.16	74	.03	2.0	65	.35	20	84	4.5
15	.20	48	.03	1.9	50	.26	237	718	459
16	.23	66	.04	1.9	81	.42	231	652	407
17	.31	116	.10	2.3	28	.17	100	267	72
18	.32	33	.03	6.3	17	.29	60	348	56
19	.44	59	.07	19	12	.62	45	410	50
20	.96	107	.28	10	12	.32	35	348	33
21	1.2	131	.42	5.8	14	.22	25	53	3.6
22	.97	138	.36	3.7	14	.14	20	36	1.9
23	.81	77	.17	3.1	24	.20	21	47	2.7
24	.91	80	.20	2.9	89	.70	20	34	1.8
25	.83	84	.19	2.9	45	.35	18	5	.24
26	5.4	77	1.1	4.0	32	.35	16	4	.17
27	1.3	72	.25	5.0	33	.45	14	8	.30
28	.94	69	.18	6.4	31	.54	12	27	.87
29	2.4	95	.62	8.2	34	.75	10	27	.73
30	16	385	17	9.4	35	.89	11	18	.53
31	17	470	22	--	--	--	12	41	1.3
TOTAL	58.51	--	44.62	1273.8	--	2698.97	1078.0	--	1124.03

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	11	23	.68	1.7	52	.24	180	640	311
2	11	40	1.2	1.7	50	.23	100	352	95
3	10	33	.89	1.6	48	.21	80	66	14
4	8.0	22	.48	1.6	37	.16	60	24	3.9
5	7.0	50	.95	1.6	64	.28	45	24	2.9
6	7.4	17	.34	1.5	67	.27	34	39	3.6
7	8.0	48	1.0	1.5	59	.24	48	24	3.1
8	8.4	49	1.1	1.5	62	.25	51	57	7.8
9	8.0	28	.60	1.4	33	.12	38	27	2.8
10	7.6	80	1.6	1.5	47	.19	22	26	1.5
11	6.8	17	.31	1.6	32	.14	26	33	2.3
12	6.0	18	.29	1.7	37	.17	34	65	6.0
13	5.0	23	.31	1.9	38	.19	95	1200	373
14	4.2	13	.15	2.2	34	.20	106	1780	509
15	3.5	12	.11	2.5	30	.20	78	1620	341
16	3.7	45	.45	3.0	72	.58	80	1210	261
17	4.0	44	.48	12	277	9.0	65	1060	186
18	4.5	44	.53	400	403	435	50	270	36
19	4.2	45	.51	250	73	49	38	46	4.7
20	4.0	39	.42	350	110	104	33	44	3.9
21	3.6	17	.17	600	355	575	32	53	4.6
22	3.4	21	.19	380	229	235	31	48	4.0
23	3.0	50	.41	300	52	42	25	34	2.3
24	2.5	8	.05	240	54	35	22	35	2.1
25	1.8	7	.03	180	52	25	19	25	1.3
26	1.7	17	.08	130	45	16	19	22	1.1
27	1.7	21	.10	120	43	14	20	20	1.1
28	1.6	34	.15	250	163	110	24	8	.52
29	1.6	13	.06	230	430	267	22	27	1.6
30	1.7	24	.11	--	--	--	19	52	2.7
31	1.7	36	.17	--	--	--	17	36	1.7
TOTAL	156.6	--	13.92	3470.5	--	1919.67	1513	--	2191.52

DES MOINES RIVER BASIN

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	19	32	1.6	139	1160	435	69	1420	265
2	19	48	2.5	147	1560	619	47	600	76
3	18	43	2.1	94	398	101	37	116	12
4	18	32	1.6	61	298	49	31	146	12
5	17	29	1.3	56	233	35	30	88	7.1
6	16	38	1.6	86	540	125	40	67	7.2
7	17	62	2.8	2640	3850	28700	29	42	3.3
8	15	82	3.3	3520	1850	17600	21	15	.85
9	12	26	.84	2530	1380	9430	18	42	2.0
10	12	50	1.6	534	1330	1920	16	63	2.7
11	12	102	3.3	293	1350	1070	13	54	1.9
12	12	62	2.0	210	1440	816	12	76	2.5
13	14	63	2.4	336	1220	1110	12	106	3.4
14	15	62	2.5	411	1110	1230	57	330	92
15	12	81	2.6	250	1040	702	103	673	208
16	53	202	29	171	1080	499	37	200	20
17	54	154	22	123	955	317	25	187	13
18	38	29	3.0	98	430	114	25	151	10
19	35	137	13	80	215	46	22	118	7.0
20	117	890	281	68	195	36	18	124	6.0
21	671	4910	12300	59	187	30	14	116	4.4
22	1030	7170	20200	52	177	25	13	93	3.3
23	319	6000	5170	46	170	21	9.9	90	2.4
24	143	5150	1990	56	214	32	8.4	78	1.8
25	94	562	143	57	167	26	7.0	103	1.9
26	70	200	38	44	122	14	6.6	81	1.4
27	56	162	24	39	131	14	5.8	90	1.4
28	61	150	25	97	723	290	5.4	60	.87
29	78	160	34	413	2410	2820	4.9	119	1.6
30	93	330	83	357	3940	3800	4.3	118	1.4
31	--	--	--	100	3120	842	--	--	--
TOTAL	3140	--	40387.04	13167	--	72868	741.3	--	772.42

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.8	115	1.2	26	560	39	269	1610	1230
2	3.7	120	1.2	2840	2100	18200	177	1580	755
3	3.1	108	.90	170	670	308	55	760	113
4	2.8	62	.47	119	850	273	34	340	31
5	2.5	65	.44	94	260	66	24	160	10
6	2.5	67	.45	4800	1290	19400	19	164	8.4
7	2.3	69	.43	777	680	1430	18	51	2.5
8	3.3	63	.56	224	590	357	24	47	3.0
9	2.9	62	.49	123	470	156	18	43	2.1
10	2.4	51	.33	89	690	166	487	1100	1450
11	2.0	118	.64	71	174	33	273	720	531
12	2.6	110	.77	57	115	18	4050	6760	95200
13	18	115	5.6	50	226	31	4130	2580	34500
14	17	165	7.6	44	202	24	5000	2670	36000
15	24	167	11	38	153	16	3640	1550	15200
16	10	116	3.1	34	248	23	1350	1900	6930
17	11	163	4.8	28	211	16	292	1530	1210
18	126	1950	737	23	150	9.3	176	690	328
19	637	1370	4580	19	98	5.0	123	450	149
20	547	1930	3430	16	78	3.4	93	470	118
21	114	1050	323	14	71	2.7	69	380	71
22	34	200	18	12	68	2.2	54	10	1.5
23	52	958	706	13	65	2.3	49	7	.93
24	935	3260	9440	12	62	2.0	48	22	2.9
25	73	3090	609	20	98	5.3	42	6	.68
26	1610	3180	13800	32	126	11	37	10	1.0
27	583	4490	6490	22	80	4.8	32	11	.95
28	144	4320	1680	20	54	2.9	34	45	4.1
29	98	1650	437	14	38	1.4	54	140	20
30	76	380	78	12	33	1.1	42	120	14
31	34	740	68	193	454	1140	--	--	--
TOTAL	5176.9	--	42435.98	10006	--	41749.4	20713	--	193888.06

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	60494.61
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	400093.63

05487980 WHITE BREAST CREEK NEAR DALLAS, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM
NOV.										
02...	8.0	--	915	879	2170	80	89	91	95	97
MAR.										
13...	3.0	1	113	--	--	--	--	--	--	--
APR.										
17...	14.0	1	60	--	--	--	--	--	--	--
22...	7.0	--	1120	7600	23000	38	46	58	69	81
MAY										
07...	13.0	--	1720	4430	20600	35	44	54	70	89
07...	13.0	--	1980	4210	22500	39	45	53	71	88
07...	13.0	--	4780	4060	52400	41	46	58	70	96
30...	16.5	--	320	4050	3500	44	53	64	75	77
JULY										
10...	--	2	2.5	--	--	--	--	--	--	--
20...	--	--	500	1800	2430	56	69	80	90	95
21...	24.5	--	136	1490	547	56	67	80	90	95
24...	--	--	1200	3040	9850	57	68	81	93	98
AUG.										
04...	16.5	--	121	1130	369	57	62	72	82	92
06...	19.0	--	6910	2050	38200	60	72	83	88	94
10...	17.0	--	89	784	188	81	87	92	95	96
SEP.										
12...	21.0	--	6400	7770	134000	41	47	60	72	93

DATE	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .062 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
NOV.										
02...	100	--	--	--	--	--	--	--	--	--
MAR.										
13...	--	--	5	7	15	66	89	90	93	94
APR.										
17...	--	--	2	2	9	48	78	82	86	--
22...	99	100	--	--	--	--	--	--	--	--
MAY										
07...	99	100	--	--	--	--	--	--	--	--
07...	96	100	--	--	--	--	--	--	--	--
07...	99	100	--	--	--	--	--	--	--	--
30...	99	--	--	--	--	--	--	--	--	--
JULY										
10...	--	--	2	3	16	38	61	65	73	80
20...	99	--	--	--	--	--	--	--	--	--
21...	98	--	--	--	--	--	--	--	--	--
24...	100	--	--	--	--	--	--	--	--	--
AUG.										
04...	98	--	--	--	--	--	--	--	--	--
06...	100	--	--	--	--	--	--	--	--	--
10...	100	--	--	--	--	--	--	--	--	--
SEP.										
12...	99	100	--	--	--	--	--	--	--	--

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-06-71	1400	1.0	*****	[illegible]	***
11-10-71	1210	3.2	*****	[illegible]	***
12-13-71	1110	23.	[illegible]	0.0	[illegible]
01-31-72	1235	1.7	*****	0.0	***
03-13-72	1225	113.	530.	3.0	[illegible]
03-30-72	1520	19.	*****	[illegible]	***
04-17-72	1130	57.	*****	[illegible]	***
05-03-72	1330	3390.	*****	[illegible]	***
05-23-72	1625	307.	*****	22.0	***
06-23-72	1210	20.	530.	[illegible]	[illegible]

06485950 BIG SIOUX RIVER AT SIOUX CITY, IOWA

LOCATION.--Lat 42°31'28", long 96°28'47", in NE1/4 SW1/4 sec.14, T.89 N., R.48 W., Woodbury County, at bridge on old U.S. Highway 77, 4.7 miles upstream from mouth, 5.2 miles northwest of city auditorium in Sioux City, and 11.7 miles downstream from Broken Kettle Creek.

DRAINAGE AREA.--9,410 sq mi, approximately, of which about 1,970 sq mi are probably noncontributing.

PERIOD OF RECORD.--Chemical analyses: July 1969 to current year.

REMARKS.--Water discharge measured at site 11.6 miles upstream. No significant inflow between measuring and sampling sites.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
DEC.											
08...	250	170	120	40	43	220	48	.4	1.2	1.0	.30
08...	250	--	--	--	--	--	--	--	--	--	--
MAR.											
08...	1200	430	38	12	8.3	38	14	.3	2.9	.9	1.4
JUNE											
06...	5040	18	82	36	16	140	14	.4	.27	1.2	.83
06...	5040	--	--	--	--	--	--	--	--	--	--
AUG.											
10...	1440	--	89	43	--	170	24	--	.30	1.2	.67
10...	1440	--	--	--	--	--	--	--	--	--	--
SEP.											
26...	467	14	93	43	38	200	42	.5	.08	.2	.43
26...	467	--	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)
DEC.										
08...	120	658	.89	444	.9	--	--	.5	--	--
08...	--	--	--	--	--	900	7.8	.5	--	14.6
MAR.										
08...	180	206	.28	667	.3	320	7.2	1.0	--	10.2
JUNE										
06...	0	473	.65	6510	.4	--	--	24.0	--	--
06...	--	--	--	--	--	740	7.8	24.0	--	6.7
AUG.										
10...	--	544	.74	2120	--	--	--	--	70	--
10...	--	--	--	--	--	780	7.9	22.0	--	8.4
SEP.										
26...	0	594	.81	749	.8	--	--	--	30	--
26...	--	--	--	--	--	750	8.3	16.5	--	9.2

DATE	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)	CYANIDE (CN) (MG/L)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)
DEC.										
08...	--	--	--	--	.01	.00	.0	.00	.00	.00
08...	104	8.7	30	650	--	--	--	--	--	--
MAR.										
08...	73	>10	1100	13000	.01	.00	.0	.00	.00	.00
JUNE										
06...	--	--	--	--	.01	.00	.0	.00	.00	.00
06...	82	2.6	260	220	--	--	--	--	--	--
AUG.										
10...	--	--	--	--	--	--	--	--	--	--
10...	99	3.4	8400	--	--	--	--	--	--	--
SEP.										
26...	--	--	--	--	--	--	--	--	--	--
26...	96	9.0	4500	--	--	--	--	--	--	--

06485950 BIG SIOUX RIVER AT SIOUX CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)
DEC.										
08...	.00	.00	.00	.00	.00	.00	.00	.00	1	0
08...	--	--	--	--	--	--	--	--	--	--
MAR.										
08...	.01	.00	.00	.00	.00	.12	.00	.00	10	10
JUNE										
06...	.01	.00	.00	.00	.00	.07	.00	.00	10	0
06...	--	--	--	--	--	--	--	--	--	--
AUG.										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
SEP.										
26...	--	--	--	--	--	--	--	--	8	--
26...	--	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED CAD-MIUM (CD) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED MOLY-BDENUM (MO) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC.										
08...	1	0	5	7	<.5	9	4	2	0	60
08...	--	--	--	--	--	--	--	--	--	--
MAR.										
08...	0	0	5	4	<.5	12	6	1	0	80
JUNE										
06...	1	0	3	3	<.5	0	6	3	0	80
06...	--	--	--	--	--	--	--	--	--	--
AUG.										
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
SEP.										
26...	0	--	14	1	<.5	--	--	1	0	40
26...	--	--	--	--	--	--	--	--	--	--

DATE	FLOAT-ING ALGAE MATS (SEVER-ITY)	FLOAT-ING DEBRIS (SEVER-ITY)	DETER-GENT SUDS (SEVER-ITY)	DEAD FISH (SEVER-ITY)	FLOAT-ING GARBAGE (SEVER-ITY)	GAS BUBBLES (SEVER-ITY)	FLOAT-ING OR SOLID ICE COVER (SEVER-ITY)	ATMOS-PHERIC ODOR (SEVER-ITY)	OIL-GREASE (SEVER-ITY)	FRESH FLOAT-ING SEWAGE SOLIDS (SEVER-ITY)	FLOAT-ING SLUDGE (SEVER-ITY)
DEC.											
08...	0	0	0	0	0	0	3	0	0	0	0
JUNE											
06...	0	0	0	0	0	0	0	0	0	0	0

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA

LOCATION.--Lat 42°29'10", long 96°24'47", in NW1/4 SE1/4 sec. 16, T.29 N., R.9 E., sixth principal meridan, Dakota County, Nebraska, at bridge on U.S. Highway 77 at Sioux City, 2.0 miles downstream from Big Sioux River, and at mile 732.3.

DRAINAGE AREA.--314,600 sq mi, approximately.

PERIOD OF RECORD.--Water temperatures: October 1971 to September 1972 (partial-record station).
Sediment records: October 1971 to September 1972.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 1,570 mg/l Mar. 22; minimum daily, 100 mg/l Feb. 3.
Sediment discharge: Maximum daily, 188,000 tons May 1; minimum daily, 5,320 tons Feb. 3.

REMARKS.--Flow affected by ice Jan. 5-7, Jan. 15 to Feb. 2. Sediment records published by the Corps of Engineers during the period October 1958 to September 1971.

COOPERATION.--Sediment samples collected and analyzed and water temperatures collected by the Corps of Engineers prior to July 1, 1972.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	---	---	---	0.5	---	---	---	18.5	---	---	20.0
2	---	---	---	---	---	---	5.5	6.5	---	---	---	---
3	---	---	---	---	---	---	---	---	---	18.0	---	---
4	16.5	---	---	---	---	---	---	---	21.0	---	---	---
5	---	---	---	---	---	---	---	10.0	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	2.0	---	---	1.0	---	---	24.0	---	---	---
8	14.5	---	---	---	---	---	---	---	---	---	---	19.5
9	---	8.5	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	9.0	11.0	---	---	---	---
11	15.5	---	---	---	---	---	---	---	---	22.0	---	---
12	---	---	---	---	---	---	---	---	21.0	---	---	---
13	---	---	0.5	---	---	---	6.5	---	---	---	---	---
14	---	---	---	---	---	5.5	---	14.5	---	24.0	---	---
15	18.0	---	---	---	---	---	---	---	---	---	27.5	18.0
16	---	---	---	---	---	---	13.0	---	---	---	---	---
17	14.5	8.5	---	0.5	---	5.5	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	21.0	22.0	25.5	---
19	---	---	---	---	---	---	---	---	---	---	---	23.0
20	---	---	1.0	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	24.0	---	---
22	14.5	---	---	---	---	5.0	---	---	---	---	---	17.0
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	18.0	---	---	---
25	14.5	---	---	---	---	---	---	21.0	---	28.5	20.5	---
26	---	---	---	---	---	5.0	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	18.0	20.5	---	---	15.0
29	4.5	---	0.5	---	2.0	4.5	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	4.5	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	13.5											

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	48900	416	54900	53800	572	83100	48200	360	46900
2	49500	416	55600	54100	550	80300	46600	357	44900
3	50200	431	58400	53800	522	75800	45000	347	42200
4	50500	502	68400	53400	512	73800	43700	394	46500
5	49800	506	68000	54400	486	71400	41800	422	47600
6	50800	492	67500	54400	432	63500	39700	477	51100
7	51500	495	68800	53100	367	52600	38500	530	55100
8	49800	492	66200	53800	336	48800	37300	531	53500
9	50200	500	67800	52800	301	42900	34300	468	43300
10	48900	517	68300	53800	337	49000	33100	413	36900
11	48900	605	79900	54700	397	58600	31300	344	29100
12	49800	621	83500	53100	420	60200	28400	240	18400
13	49800	610	82000	53100	468	67100	26300	212	15100
14	49800	580	78000	53800	496	72000	25800	235	16400
15	49800	531	71400	54100	488	71300	23300	203	12800
16	49500	526	70300	54400	422	62000	22800	201	12400
17	49500	532	71100	55700	421	63300	22000	215	12800
18	49800	528	71000	55400	439	65700	22200	258	15500
19	50200	515	69800	53400	410	59100	23700	333	21300
20	50200	403	54600	54400	393	57700	22800	332	20400
21	50500	198	27000	55000	396	58800	22600	332	20300
22	51500	123	17100	55700	387	58200	20000	271	14600
23	51200	205	28300	55400	381	57000	22800	315	19400
24	51500	416	57800	55700	372	55900	22600	320	19500
25	51500	588	81800	54700	350	51700	22400	310	18700
26	51500	610	84800	53400	325	46900	22400	312	18900
27	52800	593	84500	52400	365	51600	21600	283	16500
28	52400	407	57600	50500	368	50200	21400	270	15600
29	51200	176	24300	50200	372	50400	22800	320	19700
30	52100	228	32100	49200	361	48000	22800	309	19000
31	53100	535	76700	--	--	--	22000	305	18100
TOTAL	1566700	--	1947500	1611700	--	1806900	900200	--	842500

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	22800	340	20900	21500	105	6100	24400	478	31500
2	22600	325	19800	20500	103	5700	21600	414	24100
3	22000	310	18400	19700	100	5320	21400	404	23300
4	21000	291	16500	19200	126	6530	21400	390	22500
5	20500	312	17300	19700	171	9100	19800	348	18600
6	21000	382	21700	19800	198	10600	23700	379	24300
7	22000	423	25100	19700	205	10900	28400	435	33400
8	23000	415	25800	19300	205	10700	26600	482	34600
9	22800	413	25400	19300	212	11000	24800	492	32900
10	22800	403	24800	19000	219	11200	24600	510	33900
11	22200	386	23100	19300	245	12800	26000	528	37100
12	22000	383	22800	19800	291	15600	29200	616	48600
13	21400	375	21700	20000	313	16900	29500	722	57500
14	21000	353	20000	20000	317	17100	29500	867	69100
15	14500	307	12000	20000	321	17300	30100	890	72300
16	14500	312	12200	20000	342	18500	31300	850	71800
17	19000	439	22500	20200	338	18400	33100	752	67200
18	25000	505	34100	19300	302	15700	36400	910	89400
19	20000	410	22100	19000	288	14800	39100	1070	113000
20	15000	308	12500	20600	352	19600	39400	1140	121000
21	17000	355	16300	23700	462	29600	39400	1220	130000
22	18000	444	21600	23300	467	29400	40600	1570	172000
23	19000	486	24900	20800	397	22300	39400	1490	159000
24	18000	420	20400	21600	420	24500	38800	1190	125000
25	17000	319	14600	21400	422	24400	39400	960	102000
26	16000	224	9680	21200	421	24100	39700	820	87900
27	15000	235	9520	21400	441	25500	40300	800	87000
28	18000	240	11700	23500	518	32900	40000	748	80800
29	19000	236	12100	25800	546	38000	40000	718	77500
30	20000	231	12500	--	--	--	40000	739	79800
31	22000	175	10400	--	--	--	36700	811	80400
TOTAL	614100	--	582400	598600	--	504550	994600	--	2207500

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	40900	828	91400	47600	1460	188000	47900	481	62200
2	42700	866	99800	46600	1320	166000	47900	480	62100
3	44300	889	106000	44300	682	81600	48900	459	60600
4	42700	915	105000	49200	679	90200	49200	426	56600
5	42400	900	103000	50200	690	93500	49500	448	59900
6	43000	905	105000	48200	672	87500	49800	493	66300
7	43700	930	110000	43700	617	72800	48900	508	67100
8	44600	950	114000	40000	562	60700	52800	570	81300
9	44600	965	116000	43700	577	68100	51500	548	76200
10	44000	1040	124000	44300	562	67200	49800	562	75600
11	44300	990	118000	43400	546	64000	52400	530	75000
12	44600	835	101000	45000	576	70000	50500	458	62400
13	43700	705	83200	47600	558	71700	50500	480	65400
14	42400	800	91600	44300	479	57300	50200	472	64000
15	41800	985	111000	42100	442	50200	48600	461	60500
16	41200	1110	123000	42400	453	51900	47600	460	59100
17	42100	1200	136000	43700	478	56400	47900	475	61400
18	43400	1220	143000	43000	481	55800	46600	520	65400
19	44000	1160	138000	43700	497	58600	46600	536	67400
20	44300	1180	141000	43400	492	57700	46000	512	63600
21	44600	1210	146000	45000	500	60800	46600	511	64300
22	43000	1110	129000	46300	521	65100	46000	493	61200
23	42100	1060	120000	48200	543	70700	45000	469	57000
24	41500	1020	114000	48600	529	69400	44600	446	53700
25	41800	980	111000	43700	453	53400	45000	432	52500
26	42700	975	112000	48200	500	65100	44300	490	58600
27	43400	960	112000	50800	528	72400	43700	855	101000
28	42700	945	109000	50500	510	69500	44600	1120	135000
29	42100	935	106000	48900	505	66700	45000	970	118000
30	42400	960	110000	47900	495	64000	44000	710	84300
31	--	--	--	46900	479	60700	--	--	--
TOTAL	1291000	--	3429000	1421400	--	2287000	1431900	--	2097700

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	44300	557	66600	50200	399	54100	49200	420	55800
2	44000	405	48100	50200	403	54600	48200	414	53900
3	42700	384	44300	50500	400	54500	47600	427	54900
4	43400	402	47100	49800	392	52700	48600	440	57700
5	42100	400	45500	50200	423	57300	48600	458	60100
6	45300	435	53200	51200	540	74600	48600	440	57700
7	46600	481	60500	51200	665	91900	50200	482	65300
8	46600	500	62900	50800	663	90900	47900	470	60800
9	47200	511	65100	50200	609	82500	49200	452	60000
10	47600	510	65500	49500	570	76200	49800	480	64500
11	47900	505	65300	49200	486	64600	50200	496	67200
12	49500	522	69800	49200	480	63800	46000	442	54900
13	48900	475	62700	46900	445	56400	42700	412	47500
14	48900	445	58800	49200	492	65400	51800	535	74800
15	49500	585	78200	48600	452	59300	50800	592	81200
16	49500	610	81500	48600	420	55100	50200	602	81600
17	54100	1280	187000	48900	280	37000	50200	595	80600
18	46000	930	116000	49200	156	20700	49800	548	73700
19	40900	505	55800	48600	166	21800	49800	497	66800
20	50500	670	91400	50500	179	24400	50500	502	68400
21	53100	777	111000	49500	155	20700	50200	500	67800
22	47200	478	60900	48900	142	18700	49800	494	66400
23	42700	390	45000	50800	239	32800	49500	499	66700
24	49800	507	68200	49200	260	34500	49500	490	65500
25	49200	408	54200	49800	268	36000	49800	520	69900
26	46900	655	82900	49500	272	36400	50800	560	76800
27	49800	1040	140000	48900	265	35000	49200	540	71700
28	48600	970	127000	48900	263	34700	49500	579	77400
29	48600	690	90500	48900	264	34900	49500	605	80900
30	48900	500	66000	48900	288	38000	49800	592	79600
31	49200	394	52300	49500	357	47700	--	--	--
TOTAL	1469500	--	2323300	1535500	--	1527200	1477500	--	2010100

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	14912700
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	21565650

06486000 MISSOURI RIVER AT SIOUX CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT.							
08...	14.5	--	49400	491	65500	--	19
11...	15.5	--	48900	619	81700	5	21
25...	14.5	--	51500	610	84800	--	20
NOV.							
09...	8.5	--	52300	918	130000	3	13
DEC.							
07...	2.0	--	38500	532	55300	2	21
MAR.							
07...	1.0	--	28100	434	32900	16	42
14...	5.5	--	29400	897	71200	--	65
22...	5.0	--	40500	1640	179000	--	15
APR.							
02...	5.5	--	42300	864	98700	--	16
10...	9.0	--	43900	1070	127000	--	14
13...	6.5	--	43900	672	79700	--	33
16...	13.0	--	41100	1120	124000	--	15
MAY							
02...	6.5	--	46100	1390	173000	23	66
05...	10.0	--	49800	677	91000	7	26
10...	11.0	--	44300	556	66500	--	16
14...	14.5	--	45200	475	58000	--	19
28...	18.0	--	50800	510	70000	13	38
JUNE							
01...	18.5	--	47900	469	60700	--	22
04...	21.0	--	49000	426	56400	--	25
07...	24.0	--	48200	500	65100	--	26
12...	21.0	--	50000	448	60500	3	20
18...	21.0	--	46300	530	66300	--	21
24...	18.0	--	44600	438	52700	5	23
28...	20.5	--	43400	1100	129000	--	10
JULY							
03...	18.0	--	43300	374	43700	--	36
07...	22.0	3	48000	--	--	--	--
18...	22.0	--	50000	1080	146000	--	11
AUG.							
04...	22.0	3	51500	--	--	--	--
04...	19.0	--	51500	389	54100	--	25
22...	16.0	--	51500	501	69700	--	27
SEP.							
05...	22.5	--	49800	457	61400	--	20
05...	22.5	3	49800	--	--	--	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM
OCT.							
11...	42	87	100	--	--	--	--
NOV.							
09...	33	86	100	--	--	--	--
DEC.							
07...	49	91	100	--	--	--	--
MAR.							
07...	60	88	100	--	--	--	--
MAY							
02...	78	96	100	--	--	--	--
05...	49	91	100	--	--	--	--
28...	61	95	100	--	--	--	--
JUNE							
12...	41	89	100	--	--	--	--
18...	--	--	--	--	--	--	--
24...	43	89	100	--	--	--	--
JULY							
03...	51	94	100	--	--	--	--
07...	--	--	--	3	48	94	100
AUG.							
04...	--	--	--	1	51	99	100
04...	42	97	100	--	--	--	--
SEP.							
05...	38	94	100	--	--	--	--
05...	--	--	--	3	55	95	100

06600500 FLOYD RIVER AT JAMES, IOWA

LOCATION.--Lat 42°34'36", long 96°18'43", in SE1/4 SE1/4 sec.30, T.90 N., R.46 W., Plymouth County, on upstream side of bridge on county highway C70, 30 ft above gaging station, 0.2 mile east of James, 15.1 miles downstream from West Branch Floyd River, and at mile 9.0.
DRAINAGE AREA.--882 sq mi.
PERIOD OF RECORD.--Specific conductance: October 1968 to current year.
Water temperatures: October 1968 to current year.
Sediment records: October 1968 to current year.
EXTREMES.--Current year: Specific conductance: Maximum daily, 1,090 micromhos Jan. 27; minimum daily, 200 micromhos June 9.
Water temperatures: Maximum, 28.0°C Aug. 13; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 8,850 mg/l June 8; minimum daily, 15 mg/l Nov. 28.
Sediment discharge: Maximum daily, 48,300 tons June 8; minimum daily, 0.53 ton Feb. 15.

Period of record: Specific conductance: Maximum daily, 1,650 micromhos Mar. 11, 1969; minimum daily, 180 micromhos Apr. 6, 1969.
Water temperatures: Maximum, 28.0°C Aug. 13, 1972; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 11,900 mg/l June 5, 1971; minimum daily, 5 mg/l Feb. 13, 14, 1971.
Sediment discharge: Maximum daily, 105,000 tons June 9, 1971; minimum daily, 0.20 tons Feb. 13, 1971.
REMARKS.--Flow affected by ice Nov. 6-8, Nov. 29 to Dec. 5, Dec. 9 to Mar. 11.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	760	---	---	780	1020	250	750	500	590	700	800	800
2	750	820	---	800	880	300	750	520	590	710	800	720
3	750	870	830	750	1000	310	750	460	600	750	800	800
4	780	880	860	780	970	360	760	450	600	750	800	800
5	780	890	880	910	1000	450	760	460	590	750	760	750
6	780	790	---	955	980	385	760	460	600	---	730	725
7	780	790	850	880	1000	220	760	460	600	700	765	780
8	780	820	890	1010	850	210	760	490	240	720	700	780
9	790	860	830	910	800	260	760	655	200	700	710	780
10	800	830	820	930	900	260	790	510	460	700	710	800
11	680	880	890	790	930	240	740	520	500	700	750	810
12	610	760	890	830	930	---	770	530	540	500	740	810
13	600	830	930	890	910	225	770	500	560	710	800	810
14	745	800	900	930	830	260	770	490	570	710	800	800
15	720	790	---	1050	820	320	770	490	580	700	750	800
16	680	760	---	990	850	390	770	500	590	800	750	830
17	700	780	---	900	900	450	770	540	---	530	760	830
18	760	810	---	900	790	500	780	550	600	740	740	840
19	760	---	---	980	780	560	780	570	600	770	750	820
20	830	---	1000	1060	890	620	780	580	610	790	800	860
21	770	---	890	1030	480	700	750	580	620	460	800	760
22	800	880	900	980	800	690	730	600	630	640	800	820
23	730	880	950	950	810	710	720	570	640	640	800	800
24	730	930	900	980	850	750	720	540	650	750	820	800
25	730	900	910	980	850	820	730	540	680	820	780	790
26	680	880	910	840	860	810	730	550	630	820	770	770
27	780	810	800	1090	800	800	750	560	630	800	760	800
28	800	860	720	970	790	790	730	560	640	750	760	850
29	790	840	850	970	285	820	730	580	650	780	760	850
30	750	810	870	1050	---	750	710	530	780	800	750	860
31	740	---	930	1020	---	750	---	580	---	820	800	---
MONTH	746	837	---	932	846	499	753	530	578	717	768	802
YEAR	737											

FLOYD RIVER BASIN

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	6.0	0.0	0.0	0.0	0.0	2.0	11.0	17.0	22.0	22.0	14.0
2	16.0	5.0	0.0	0.0	0.0	0.0	6.0	11.0	20.0	21.0	20.0	14.0
3	12.0	4.0	1.0	0.0	0.0	0.0	5.0	8.5	22.0	17.0	19.0	16.0
4	11.0	3.0	0.0	0.0	0.0	0.0	4.0	12.0	21.0	16.0	19.0	16.0
5	12.0	4.0	0.0	0.0	0.0	0.0	7.0	13.0	21.0	16.0	20.0	17.0
6	12.0	0.C	0.0	0.0	0.0	0.0	10.0	12.0	22.0	15.0	19.0	20.5
7	11.0	0.0	2.0	0.0	0.0	0.0	9.0	10.0	22.0	18.0	18.5	18.0
8	11.0	0.0	0.0	0.0	0.0	2.0	5.0	10.0	19.0	24.0	19.0	15.0
9	9.0	0.0	0.0	0.0	0.0	1.0	4.0	12.5	22.0	23.0	18.0	16.0
10	6.0	2.0	1.0	0.0	0.0	1.0	8.0	12.0	19.0	24.0	18.0	18.0
11	9.0	6.5	1.0	0.0	0.0	2.0	12.0	13.0	17.0	23.0	21.0	18.0
12	9.0	4.0	0.0	0.0	0.0	1.0	11.0	13.0	20.0	23.0	24.0	19.0
13	10.0	5.0	0.0	0.0	0.0	2.5	9.0	12.0	23.0	21.0	28.0	21.0
14	12.5	8.0	0.0	0.0	0.0	2.0	9.0	12.0	22.0	24.0	25.0	15.0
15	9.0	5.0	---	0.0	0.0	3.0	8.0	12.0	20.0	22.0	26.0	17.0
16	11.0	10.0	---	0.0	0.0	4.0	10.0	16.0	20.0	22.0	25.0	18.0
17	14.0	8.0	---	0.0	0.0	5.0	12.0	19.0	---	21.0	25.0	17.0
18	17.0	5.0	---	0.0	0.0	4.0	12.0	19.0	20.0	20.0	27.0	17.0
19	12.0	---	---	0.0	0.0	3.0	10.0	19.0	20.0	22.0	26.0	21.0
20	10.0	---	0.0	0.0	0.0	7.0	8.0	19.0	17.0	23.0	26.0	16.0
21	11.0	---	0.0	0.0	0.0	8.0	8.0	20.0	16.0	22.0	24.0	18.0
22	11.0	1.0	0.0	0.0	0.0	7.0	8.0	20.0	16.0	24.0	20.0	12.0
23	11.0	1.0	0.0	0.0	0.0	5.0	8.0	18.0	22.0	26.0	18.0	13.0
24	13.0	1.0	0.0	0.0	0.0	6.0	7.0	18.0	19.0	26.0	18.0	19.0
25	12.0	1.0	0.0	0.0	0.0	4.0	9.0	18.0	18.0	25.0	17.0	12.0
26	14.0	3.0	0.0	0.0	0.0	4.0	12.0	21.0	21.0	24.0	17.0	10.0
27	14.0	1.0	0.0	0.0	0.0	4.0	10.0	20.0	21.0	23.0	16.0	12.0
28	8.0	1.0	0.0	0.0	0.0	3.0	9.0	21.0	21.0	20.0	16.0	15.0
29	6.0	1.0	0.0	0.0	0.0	4.0	9.0	18.0	22.0	20.0	16.0	10.0
30	6.0	1.0	0.0	0.0	---	5.0	11.0	16.0	22.0	22.0	18.0	15.0
31	3.0	---	0.0	0.0	---	3.0	---	15.0	---	22.0	18.0	---
MONTH	11.0	3.C	0.0	0.0	0.0	3.0	8.5	15.0	20.0	21.5	21.0	16.0
YEAR	10.0											

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	40	107	12	61	133	22	41	40	4.4
2	43	107	12	54	81	12	40	51	5.5
3	39	88	9.3	49	65	8.6	39	67	7.1
4	36	64	6.2	45	52	6.3	39	59	6.2
5	35	82	7.7	44	67	8.0	39	33	3.5
6	32	66	5.7	40	164	18	38	38	3.9
7	32	56	4.8	38	230	24	40	31	3.3
8	31	54	4.5	45	87	11	37	28	2.8
9	34	36	3.3	46	67	8.3	37	124	12
10	35	55	5.2	41	59	6.5	35	108	10
11	31	142	12	40	45	4.9	34	94	8.6
12	32	123	11	40	62	6.7	32	90	7.8
13	30	96	7.8	38	63	6.5	30	80	6.5
14	31	57	4.8	37	70	7.0	28	64	4.8
15	30	48	3.9	36	102	9.9	26	55	3.9
16	32	65	5.6	37	92	9.2	25	65	4.4
17	31	80	6.7	45	87	11	24	56	3.6
18	32	87	7.5	59	70	11	23	52	3.2
19	32	69	6.0	59	59	9.4	23	29	1.8
20	34	67	6.2	55	51	7.6	23	19	1.2
21	34	60	5.5	47	42	5.3	22	43	2.6
22	34	61	5.6	43	34	3.9	22	28	1.7
23	34	69	6.3	41	32	3.5	22	25	1.5
24	34	78	7.2	46	37	4.6	21	16	.91
25	34	90	8.3	44	48	5.7	21	20	1.1
26	30	105	8.5	44	56	6.7	21	22	1.2
27	38	117	12	45	30	3.6	20	31	1.7
28	47	138	18	41	15	1.7	20	45	2.4
29	45	64	7.8	41	31	3.4	20	42	2.3
30	58	140	22	41	34	3.8	20	36	1.9
31	70	261	49	--	--	--	19	28	1.4
TOTAL	1130	--	292.4	1342	--	250.1	881	--	123.21

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	18	43	2.1	9.4	50	1.3	500	455	614
2	16	42	1.8	9.4	67	1.7	200	71	38
3	15	42	1.7	9.4	48	1.2	160	62	27
4	14	52	2.0	9.2	28	.70	95	51	13
5	16	52	2.2	9.2	27	.67	100	40	11
6	16	37	1.6	9.2	26	.65	300	1040	842
7	17	62	2.8	9.2	31	.77	1200	2040	6610
8	18	25	1.2	9.2	46	1.1	600	760	1230
9	19	23	1.2	9.2	40	.99	500	360	486
10	19	24	1.2	9.2	24	.60	600	650	1050
11	19	51	2.6	9.2	65	1.6	1200	2000	6480
12	19	105	5.4	9.2	34	.84	2280	2880	17700
13	15	72	2.9	9.2	32	.79	2710	3520	25800
14	12	67	2.2	9.4	57	1.4	1680	3670	16600
15	11	680	20	9.4	21	.53	821	3000	6650
16	11	3100	92	9.6	22	.57	474	1670	2140
17	11	3570	106	9.6	29	.75	334	930	839
18	11	2580	77	9.8	51	1.3	260	630	442
19	11	570	17	9.8	53	1.4	225	580	352
20	11	230	6.8	10	48	1.3	199	520	279
21	11	104	3.1	10	38	1.0	195	560	295
22	11	112	3.3	11	61	1.8	191	400	206
23	10	52	1.4	11	31	.92	185	439	219
24	10	260	7.0	12	39	1.3	170	291	134
25	10	250	6.8	12	20	.65	149	183	74
26	9.8	94	2.5	14	16	.60	139	165	62
27	9.8	86	2.3	18	40	1.9	128	144	50
28	9.8	108	2.9	50	84	11	120	151	49
29	9.6	85	2.2	300	525	425	112	142	43
30	9.6	52	1.3	--	--	--	107	129	37
31	9.6	93	2.4	--	--	--	101	102	28
TOTAL	409.2	--	384.9	625.8	--	464.33	16035	--	89400

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	96	67	17	472	5290	7470	207	550	307
2	93	86	22	843	6690	15200	191	540	278
3	92	106	26	959	4600	11900	186	520	261
4	88	102	24	708	2600	4970	303	1930	1580
5	87	94	22	621	1770	2970	223	1710	1030
6	81	90	20	606	1620	2650	191	610	315
7	81	88	19	594	1490	2390	845	4280	1880
8	81	64	14	480	1130	1460	2020	8850	48300
9	81	84	18	409	820	906	1730	4650	21700
10	74	134	27	367	900	892	701	2330	4410
11	75	89	18	342	970	896	509	1400	1920
12	76	78	16	330	1200	1070	413	1030	1150
13	74	79	16	390	1110	1170	364	920	904
14	72	64	12	431	880	1020	322	910	791
15	71	47	9.0	416	880	988	280	650	491
16	67	55	9.9	367	840	832	258	570	397
17	68	90	17	330	770	686	296	900	719
18	61	89	15	300	680	551	247	700	467
19	62	52	8.7	266	600	431	232	590	370
20	63	147	25	243	490	321	223	520	313
21	109	466	137	226	450	275	204	510	281
22	145	467	183	216	390	227	184	411	204
23	167	455	205	263	1050	746	171	352	163
24	153	211	87	295	1100	876	160	313	135
25	134	237	86	316	2120	1810	154	258	107
26	120	114	37	264	930	663	146	288	114
27	114	87	27	235	600	381	139	289	108
28	122	109	36	229	650	402	135	262	95
29	145	118	46	285	1530	1180	128	229	79
30	151	700	285	292	1600	1260	122	205	68
31	--	--	--	228	680	419	--	--	--
TOTAL	2903	--	1484.6	12323	--	67012	11284	--	88937

06600500 FLOYD RIVER AT JAMES, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	115	195	61	197	510	271	62	110	18
2	110	174	52	170	360	165	64	108	19
3	106	149	43	160	350	151	61	103	17
4	101	147	40	149	300	121	59	90	14
5	95	142	36	137	580	215	59	81	13
6	217	7270	6980	134	1750	633	56	86	13
7	119	2380	765	201	600	326	54	94	14
8	95	420	108	276	950	708	52	98	14
9	92	278	69	230	775	481	51	93	13
10	89	198	48	217	539	316	51	90	12
11	134	950	344	192	490	254	51	90	12
12	176	1700	808	170	466	214	50	81	11
13	236	1560	994	151	402	164	50	105	14
14	265	1480	1060	136	420	154	52	102	14
15	179	790	382	118	365	116	49	110	15
16	229	1090	674	111	346	104	47	140	18
17	254	1440	988	102	322	89	45	115	14
18	208	800	449	93	294	74	44	110	13
19	195	455	240	86	207	48	44	107	13
20	453	3600	6090	79	170	36	44	92	11
21	768	4930	10200	75	153	31	54	53	7.7
22	854	2820	6500	73	142	28	52	85	12
23	673	2090	3800	74	167	33	45	105	13
24	455	1840	2260	70	112	21	44	87	10
25	354	920	879	69	100	19	54	210	31
26	296	710	567	76	101	21	70	283	53
27	258	620	432	69	104	19	60	83	13
28	227	590	362	66	110	20	58	70	11
29	217	480	281	61	98	16	56	84	13
30	201	450	244	59	103	16	52	61	8.6
31	195	470	247	60	112	18	--	--	--
TOTAL	7966	--	46003	3861	--	4882	1590	--	454.3

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 60350.0
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 299687.84

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMP-ERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
MAR.							
07...	.0	3370	1880	17100	30	36	38
12...	1.0	2170	3000	17600	39	42	51
13...	2.0	3010	2920	23700	31	36	40
14...	2.0	1840	3520	17500	24	30	39
JULY							
06...	15.0	327	17100	15100	44	52	63

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
MAR.						
07...	51	76	97	98	99	100
12...	62	84	95	97	100	--
13...	47	74	91	93	99	100
14...	50	72	95	98	100	--
JULY						
06...	81	97	100	--	--	--

06600520 FLOYD RIVER AT SIOUX CITY, IOWA

LOCATION.--Lat 42°29'19", long 96°23'29", in NE1/4 NE1/4 sec.33, T.89 N., R.47 W., Woodbury County, at bridge on Dace Street in Sioux City, and 0.4 mile upstream from mouth.
DRAINAGE AREA.--921 sq mi.
PERIOD OF RECORD.-- Chemical analyses: July 1969 to current year.
REMARKS.--Water discharge estimated on basis of records at gaging station 8.6 miles upstream at James. No significant inflow between gaging station and sampling site.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT.											
14...	31	--	100	35	--	140	38	--	.42	.9	.36
NOV.											
11...	39	--	120	34	--	160	40	--	.17	2.0	.39
DEC.											
08...	39	290	120	35	39	150	46	.5	.72	1.5	.29
JAN.											
06...	16	--	140	39	--	170	60	--	.47	2.4	.37
FEB.											
08...	8.7	--	130	34	--	150	54	--	1.3	.00	.92
MAR.											
08...	450	290	29	8.5	5.5	19	12	.3	3.7	1.6	1.6
APR.											
11...	76	--	96	34	--	130	52	--	.38	1.3	.43
MAY											
09...	415	--	110	44	--	140	26	--	.11	8.4	74
JUNE											
06...	192	38	110	39	23	140	24	.6	.09	5.7	.45
JULY											
18...	203	--	94	23	--	110	22	--	.13	3.8	.55
AUG.											
10...	225	--	110	40	--	140	27	--	.37	5.9	.80
SEP.											
26...	71	65	88	34	34	130	52	.4	.21	1.6	.41

DATE	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)
OCT.										
14...	--	542	.74	45.4	--	--	--	--	--	--
14...	--	--	--	--	--	900	7.9	12.5	--	11.4
NOV.										
11...	--	594	.81	62.5	--	--	--	6.0	--	--
11...	--	--	--	--	--	950	7.5	6.0	--	15.6
DEC.										
08...	110	612	.83	64.4	.8	--	--	.5	--	--
08...	--	--	--	--	--	1000	7.9	.5	--	12.4
JAN.										
06...	--	718	.98	31.0	--	--	--	.0	--	--
06...	--	--	--	--	--	1250	8.0	.0	--	13.0
FEB.										
08...	--	670	.91	15.7	--	--	--	--	--	--
08...	--	--	--	--	--	1150	8.0	.0	--	3.2
MAR.										
08...	660	150	.20	182	.2	--	--	1.0	--	--
08...	--	--	--	--	--	230	6.9	1.5	--	11.2
APR.										
11...	--	544	.74	112	--	--	--	12.0	--	--
11...	--	--	--	--	--	900	8.4	12.0	--	13.6
MAY										
09...	--	608	.83	681	--	--	--	--	--	--
09...	--	--	--	--	--	750	8.1	14.0	--	10.2
JUNE										
06...	0	594	.81	308	.5	--	--	28.0	--	--
06...	--	--	--	--	--	900	7.9	28.0	--	8.7
JULY										
18...	--	426	.58	233	--	--	--	--	110	--
18...	--	--	--	--	--	420	8.3	21.5	--	8.2
AUG.										
10...	--	586	.80	356	--	--	--	--	60	--
10...	--	--	--	--	--	850	8.0	21.0	--	9.4
SEP.										
26...	0	508	.69	97.4	.8	--	--	--	55	--
26...	--	--	--	--	--	860	8.0	13.0	--	10.1

06600520 FLOYD RIVER AT SIOUX CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	PER-CENT SATUR-ATION	BIO-CHEM-ICAL OXYGEN DEMAND (MG/L)	FECAL COLI-FORM (COL. PER 100 ML)	STREP-TOCOCCI (COL-ONIES PER 100 ML)	CYANIDE (CN) (MG/L)	ALDRIN (UG/L)	CHLOR-DANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)
OCT.										
14...	--	--	--	--	--	--	--	--	--	--
14...	113	6.8	750	--	--	--	--	--	--	--
NOV.										
11...	--	--	--	--	--	--	--	--	--	--
11...	129	5.3	120	--	--	--	--	--	--	--
DEC.										
08...	--	--	--	--	.00	.00	.0	.00	.00	.00
08...	89	4.3	640	850	--	--	--	--	--	--
JAN.										
06...	--	--	--	--	--	--	--	--	--	--
06...	93	7.5	180	--	--	--	--	--	--	--
FEB.										
08...	--	--	--	--	--	--	--	--	--	--
08...	22	6.5	580	--	--	--	--	--	--	--
MAR.										
08...	--	--	--	--	.01	.00	.0	.00	.00	.00
08...	82	>17	2600	9300	--	--	--	--	--	--
APR.										
11...	--	--	--	--	--	--	--	--	--	--
11...	131	7.5	3100	--	--	--	--	--	--	--
MAY										
09...	--	--	--	--	--	--	--	--	--	--
09...	101	5.1	1200	--	--	--	--	--	--	--
JUNE										
06...	--	--	--	--	.02	.00	.0	.00	.00	.00
06...	113	2.3	6200	990	--	--	--	--	--	--
JULY										
18...	--	--	--	--	--	--	--	--	--	--
18...	95	4.3	34000	--	--	--	--	--	--	--
AUG.										
10...	--	--	--	--	--	--	--	--	--	--
10...	107	3.5	10000	--	--	--	--	--	--	--
SEP.										
26...	--	--	--	--	--	--	--	--	--	--
26...	98	5.8	11000	--	--	--	--	--	--	--

DATE	DI-ELDRIN (UG/L)	ENDRIN (UG/L)	HEPTA-CHLOR (UG/L)	HEPTA-CHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	DIS-SOLVED ARSENIC (AS) (UG/L)	DIS-SOLVED BERYL-LIUM (BE) (UG/L)
DEC.										
08...	.01	.00	.00	.00	.00	.00	.00	.00	0	0
MAR.										
08...	.02	.00	.00	.00	.01	.09	.00	.00	10	10
JUNE										
06...	.02	.00	.00	.00	.00	--	--	--	5	10
SEP.										
26...	--	--	--	--	--	--	--	--	9	--

DATE	DIS-SOLVED CAD-MIUM (CD) (UG/L)	DIS-SOLVED CHRO-MIUM (CR) (UG/L)	DIS-SOLVED COPPER (CU) (UG/L)	DIS-SOLVED LEAD (PB) (UG/L)	DIS-SOLVED MERCURY (HG) (UG/L)	DIS-SOLVED MOLY-BDENUM (MO) (UG/L)	DIS-SOLVED NICKEL (NI) (UG/L)	DIS-SOLVED SELE-NIUM (SE) (UG/L)	DIS-SOLVED SILVER (AG) (UG/L)	DIS-SOLVED ZINC (ZN) (UG/L)
DEC.										
08...	1	0	19	10	<.5	50	4	4	0	80
MAR.										
08...	0	0	5	5	2.0	0	8	0	0	70
JUNE										
06...	2	0	5	3	<.5	3	13	4	0	100
SEP.										
26...	0	0	6	0	.8	--	--	3	1	60

06600520 FLOYD RIVER AT SIOUX CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	FLOATING ALGAE MATS (SEVERITY)	FLOATING DEBRIS (SEVERITY)	DETERGENT SUDS (SEVERITY)	DEAD FISH (SEVERITY)	FLOATING GARBAGE (SEVERITY)	GAS BUBBLES (SEVERITY)	FLOATING OR SOLID ICE COVER (SEVERITY)	ATMOSPHERIC ODOR (SEVERITY)	OIL-GREASE (SEVERITY)	FRESH FLOATING SEWAGE SOLIDS (SEVERITY)	FLOATING SLUDGE (SEVERITY)
OCT.											
14...	1	0	0	0	0	0	0	0	0	0	0
NOV.											
11...	0	0	0	0	0	0	0	0	0	0	0
DEC.											
08...	0	0	0	0	0	0	3	0	0	0	0
JAN.											
06...	0	0	0	0	0	0	4	0	0	0	0
FEB.											
08...	0	0	0	0	0	0	3	1	0	0	0
MAR.											
08...	0	0	0	0	0	0	0	0	1	0	0
APR.											
11...	0	0	0	0	0	0	0	0	1	0	0
MAY											
09...	0	0	0	0	0	0	0	0	1	0	0
JUNE											
06...	0	0	0	0	0	0	0	0	2	0	0

06604000 SPIRIT LAKE NEAR ORLEANS, IOWA

LOCATION.--Lat 43° 28' 12", long 95°07'25", in NE1/4 NW1/4 sec.20, T.100 N., R.36 W., Dickinson County, at gaging station, 2.3 miles upstream from lake outlet, and 2.3 miles northwest of Orleans.

DRAINAGE AREA.--75.6 sq mi.

PERIOD OF RECORD.--Water temperatures: November 1968 to current year.

EXTREMES.--Current year: Water temperatures: Maximum, 23.5°C July 23-27; minimum recorded, 1.0 Nov. 22-Dec.17, Jan. 4-9.

Period of record: Water temperatures: Maximum, 24.0°C July 30, 31, 1970; freezing point on many days during winter period in 1968, 1969, 1970.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	15.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
2	15.5	15.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
3	15.5	15.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
4	15.5	15.5	---	---	1.0	1.0	1.5	1.0	1.5	1.5	1.5	1.5
5	15.5	15.5	---	---	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
6	15.5	15.5	---	---	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
7	15.5	15.0	---	---	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
8	15.0	15.0	---	---	1.0	1.0	1.0	1.0	1.5	1.5	1.5	1.5
9	15.0	14.5	---	---	1.0	1.0	1.5	1.0	1.5	1.5	1.5	1.5
10	14.5	14.0	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
11	14.0	14.0	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
12	14.0	13.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
13	13.5	13.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
14	13.5	13.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
15	13.5	13.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
16	13.5	13.5	---	---	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5
17	13.5	13.5	---	---	1.5	1.0	1.5	1.5	1.5	1.5	1.5	1.5
18	13.5	13.5	---	---	1.5	1.5	1.5	1.5	1.5	1.5	2.0	1.5
19	13.5	13.5	---	---	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0
20	13.5	13.5	---	---	1.5	1.5	1.5	1.5	1.5	1.5	3.0	2.0
21	13.5	13.5	---	---	1.5	1.5	1.5	1.5	1.5	1.5	3.0	3.0
22	13.5	13.5	---	1.0	1.5	1.5	1.5	1.5	1.5	1.5	3.0	3.0
23	13.5	13.5	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	3.5	3.0
24	13.5	13.5	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	3.5	3.5
25	13.5	13.5	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	4.0	3.5
26	13.5	13.5	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	4.0	4.0
27	13.5	13.5	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	4.0	4.0
28	13.5	13.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	4.0	3.5
29	13.0	13.0	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	3.5	3.5
30	13.0	13.0	1.0	1.0	1.5	1.5	1.5	1.5	---	---	3.5	3.5
31	13.0	13.0	---	---	1.5	1.5	1.5	1.5	---	---	3.5	3.5
MONTH	15.5	13.0	---	---	1.5	1.0	1.5	1.0	1.5	1.5	4.0	1.5

06604000 SPIRIT LAKE NEAR ORLEANS, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	4.0	3.5	6.5	6.5	16.0	16.0	21.0	21.0	22.0	21.5	20.5	20.0
2	4.5	4.0	6.5	6.5	16.5	16.0	21.0	20.5	21.5	21.5	20.0	19.5
3	4.5	4.5	7.0	6.5	19.5	16.5	20.5	20.5	21.5	21.0	19.5	19.5
4	4.5	4.5	8.5	7.0	19.5	19.0	20.5	20.0	21.0	21.0	19.5	19.5
5	5.0	4.5	8.5	8.5	19.0	19.0	20.0	20.0	21.0	21.0	19.5	19.5
6	5.0	5.0	8.5	8.5	19.0	19.0	20.0	19.0	21.0	21.0	19.5	19.0
7	5.0	4.0	9.0	8.5	19.0	19.0	19.5	19.0	21.0	20.5	19.0	19.0
8	4.0	3.5	9.0	9.0	19.5	19.0	19.5	19.0	20.5	20.5	19.0	18.5
9	4.0	3.5	9.0	8.0	19.5	19.5	20.5	19.0	20.5	20.0	18.5	18.5
10	5.0	4.0	9.0	9.0	19.5	19.0	20.5	20.5	20.0	20.0	18.5	18.5
11	5.0	5.0	9.0	9.0	19.0	18.5	20.0	20.0	21.0	20.0	18.5	18.5
12	5.0	5.0	9.5	9.0	19.5	18.5	20.0	20.0	21.5	21.0	18.5	18.5
13	5.0	5.0	9.5	9.5	19.5	19.0	20.5	20.0	21.5	21.5	18.5	18.5
14	5.0	5.0	9.5	9.5	19.0	19.0	20.5	20.5	21.5	21.0	18.5	18.0
15	5.5	5.0	10.0	9.5	19.5	19.0	20.5	20.5	21.0	21.0	18.0	18.0
16	6.5	5.5	10.0	10.0	19.5	19.5	20.5	20.5	21.0	21.0	18.0	18.0
17	6.5	6.5	10.5	10.0	19.5	18.5	20.5	20.5	21.5	21.0	18.0	18.0
18	6.5	6.0	11.0	10.5	18.5	18.5	20.5	20.5	21.5	21.5	18.0	18.0
19	6.0	6.0	11.5	11.0	18.5	18.5	20.5	20.5	23.0	21.5	18.5	18.0
20	6.0	6.0	12.0	11.5	18.5	18.0	21.0	20.5	23.0	23.0	18.5	18.5
21	6.0	6.0	15.0	12.0	18.0	18.0	21.0	21.0	23.0	23.0	18.5	18.0
22	6.0	6.0	15.5	15.0	18.5	18.0	21.0	21.0	23.0	22.0	18.0	18.0
23	6.0	6.0	15.5	15.5	19.0	18.5	23.5	21.0	22.0	21.0	18.0	18.0
24	6.0	6.0	15.5	15.5	19.0	19.0	23.5	23.5	21.0	21.0	18.0	18.0
25	6.0	6.0	16.5	15.5	19.0	19.0	23.5	23.5	21.0	20.5	18.0	15.5
26	6.0	6.0	16.5	16.5	19.0	19.0	23.5	23.5	20.5	20.5	15.5	15.5
27	6.0	6.0	16.5	16.5	19.0	19.0	23.5	23.0	20.5	20.0	15.5	15.0
28	6.0	6.0	16.5	16.5	19.0	19.0	23.0	22.0	21.0	20.0	15.0	15.0
29	6.0	6.0	16.5	16.5	19.0	19.0	22.0	22.0	21.0	20.5	15.0	14.5
30	6.5	6.0	16.5	16.5	21.0	19.0	22.0	22.0	20.5	20.5	14.5	14.5
31	---	---	16.0	16.0	---	---	22.0	22.0	20.5	20.5	---	---
MONTH	6.5	3.5	16.5	6.5	21.0	16.0	23.5	19.0	23.0	20.0	20.5	14.5
YEAR	23.5	1.0										

NOTE.--No temperature record Nov. 1-21.

06607513 LITTLE SIOUX RIVER AT RIVER SIOUX, IOWA

LOCATION.--Lat 41°48'38", long 96°02'53", in NW1/4 SE1/4 sec.23, T.81 N., R.45 W., Harrison County, at bridge on U.S. Highway 75, 0.2 mile north of River Sioux, and 1 mile upstream from mouth.

DRAINAGE AREA.--3,600 sq mi, approximately.

PERIOD OF RECORD.--Chemical analyses: July 1969 to current year.

REMARKS.--Water discharge estimated on basis of records at gaging station 12.5 miles upstream near Turin. No significant inflow between gaging station and sampling site.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT.											
14...	154	--	66	35	--	120	36	--	.02	.1	.22
NOV.											
11...	263	--	100	32	--	120	20	--	.05	2.6	.39
DEC.											
08...	270	45	110	34	19	130	22	.4	.08	2.3	.37
JAN.											
06...	120	--	140	42	--	160	42	--	.22	3.7	.21
FEB.											
08...	64	--	140	41	--	150	30	--	.65	1.9	.24
MAR.											
08...	3500	290	32	10	4.1	21	8.0	.3	2.1	2.3	3.2
APR.											
11...	409	--	82	35	--	110	18	--	.08	.8	.31
MAY											
09...	3300	--	100	34	--	110	18	--	.14	8.0	2.1
JUNE											
06...	1330	20	94	37	17	110	22	.6	.04	5.7	.29
JULY											
12...	548	--	47	22	--	77	16	--	.23	.8	.56
AUG.											
10...	1570	--	77	28	--	71	18	--	.12	4.5	.72
SEP.											
21...	400	85	70	29	19	100	38	.4	.09	1.0	.41

DATE	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)
OCT.										
14...	--	448	.61	186	--	--	--	--	--	--
14...	--	--	--	--	--	700	7.9	11.5	--	8.8
NOV.										
11...	--	482	.66	342	--	--	--	5.5	--	--
11...	--	--	--	--	--	800	7.3	5.5	--	14.0
DEC.										
08...	70	536	.73	391	.4	--	--	.5	--	--
08...	--	--	--	--	--	710	7.8	.5	--	14.6
JAN.										
06...	--	700	.95	227	--	--	--	--	--	--
06...	--	--	--	--	--	1050	7.9	.0	--	15.6
FEB.										
08...	--	658	.89	114	--	--	--	--	--	--
08...	--	--	--	--	--	1200	8.2	.0	--	9.4
MAR.										
08...	0	170	.23	1610	.2	--	--	.0	--	--
08...	--	--	--	--	--	260	7.4	.0	--	9.6
APR.										
11...	--	424	.58	468	--	--	--	13.0	--	--
11...	--	--	--	--	--	740	8.5	13.0	--	13.4
MAY										
09...	--	492	.67	4380	--	--	--	--	--	--
09...	--	--	--	--	--	750	8.1	14.0	--	10.0
JUNE										
06...	40	520	.71	1870	.4	--	--	26.0	--	--
06...	--	--	--	--	--	570	8.3	26.0	--	10.1
JULY										
12...	--	284	.39	420	--	--	--	--	70	--
12...	--	--	--	--	--	460	7.2	24.0	--	4.6
AUG.										
10...	--	392	.53	1660	--	--	--	--	100	--
10...	--	--	--	--	--	600	7.9	20.5	--	8.8
SEP.										
21...	0	368	.50	397	.5	--	--	--	30	--
21...	--	--	--	--	--	640	8.3	19.5	--	10.2

06607513 LITTLE SIOUX RIVER AT RIVER SIOUX, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	CYANIDE (CN) (MG/L)	ALDRIN (UG/L)	CHLORDANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)
OCT.										
14...	85	9.6	150	--	--	--	--	--	--	--
NOV.										
11...	115	4.4	700	--	--	--	--	--	--	--
DEC.										
08...	--	--	--	--	.01	.00	.0	.00	.00	.00
08...	104	4.4	200	400	--	--	--	--	--	--
JAN.										
06...	112	7.8	24	--	--	--	--	--	--	--
FEB.										
08...	66	3.0	98	--	--	--	--	--	--	--
MAR.										
08...	--	--	--	--	.03	.00	.0	.00	.00	.00
08...	67	>11	1300	19000	--	--	--	--	--	--
APR.										
11...	131	8.2	11	--	--	--	--	--	--	--
MAY										
09...	99	7.7	1100	--	--	--	--	--	--	--
JUNE										
06...	--	--	--	--	.01	.00	.0	.00	.00	.00
06...	126	3.5	160	<10	--	--	--	--	--	--
JULY										
12...	55	6.4	94000	--	--	--	--	--	--	--
AUG.										
10...	100	2.7	2400	--	--	--	--	--	--	--
SEP.										
21...	112	11	1200	--	--	--	--	--	--	--

DATE	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)
DEC.										
08...	.00	.00	.00	.00	.00	.00	.00	.00	0	0
MAR.										
08...	.02	.00	.00	.00	.00	.12	.00	.00	10	10
JUNE										
06...	.01	.00	.00	.00	.00	.19	.01	.00	8	10
SEP.										
21...	--	--	--	--	--	--	--	--	4	--

DATE	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED SILVER (AG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
DEC.										
08...	0	0	2	8	<.5	19	2	0	0	60
MAR.										
08...	0	0	8	4	1.0	27	14	0	0	60
JUNE										
06...	1	0	3	2	3.3	0	4	3	0	80
SEP.										
21...	0	2	7	0	<.5	--	--	3	1	40

DATE	FLOATING ALGAE MATS (SEVERITY)	FLOATING DEBRIS (SEVERITY)	DETERGENT SUDS (SEVERITY)	DEAD FISH (SEVERITY)	FLOATING GARBAGE (SEVERITY)	GAS BUBBLES (SEVERITY)	FLOATING OR SOLID ICE COVER (SEVERITY)	ATMOSPHERIC ODOR (SEVERITY)	OIL-GREASE (SEVERITY)	FRESH FLOATING SEWAGE SOLIDS (SEVERITY)	FLOATING SLUDGE (SEVERITY)
OCT.											
14...	1	0	0	0	0	0	0	0	0	0	0
NOV.											
11...	0	0	0	0	0	0	0	0	0	0	0
DEC.											
08...	0	0	0	0	0	0	1	0	0	0	0
JAN.											
06...	0	0	0	0	0	0	4	0	0	0	0
FEB.											
08...	0	0	0	0	0	0	4	0	0	0	0
MAR.											
08...	0	0	0	0	0	0	2	0	0	0	0
APR.											
11...	0	0	0	0	0	0	0	0	0	0	0
MAY											
09...	0	0	0	0	0	0	0	0	0	0	0
JUNE											
06...	0	0	0	0	0	0	0	0	0	0	0

06608505 SOLDIER RIVER NEAR MONDAMIN, IOWA

LOCATION.--Lat 41°45'14", long 96°02'13", in NE1/4 SW1/4 sec.12, T.80 N., R.45 W., Harrison County, at bridge on county highway, 3 miles northwest of Mondamin, and 3.2 miles upstream from mouth.
DRAINAGE AREA.--440 sq mi, approximately.
PERIOD OF RECORD.--Chemical analyses: July 1970 to current year.
REMARKS.--Water discharge estimated on basis of records at gaging station 9.9 miles upstream at Pisgah. No significant inflow between gaging station and sampling site.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	AMMONIA NITRO-GEN (N) (MG/L)	TOTAL NITRATE (N) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)
OCT.											
14...	11	--	69	34	--	42	12	--	.01	.00	.060
NOV.											
11...	22	--	97	32	--	54	12	--	.37	1.2	.34
DEC.											
08...	20	120	97	31	13	50	12	.4	.02	.8	.25
JAN.											
06...	--	--	130	46	--	58	10	--	.05	.1	.22
FEB.											
08...	5.2	--	110	35	--	42	8.0	--	.09	.6	.11
MAR.											
08...	86	220	36	11	3.1	15	6.0	.3	3.2	1.6	.73
APR.											
11...	31	--	73	34	--	48	11	--	.03	.1	.15
MAY											
09...	92	--	96	33	--	54	12	--	.49	2.0	.74
JUNE											
06...	43	75	83	35	11	40	18	.4	.15	.9	.31
JULY											
12...	570	--	59	13	--	18	6.0	--	.44	2.9	3.7
AUG.											
10...	58	--	82	26	--	36	10	--	.13	1.6	.50
SEP.											
21...	66	30	94	34	11	46	12	.3	.17	1.6	.47

DATE	DIS-SOLVED BORON (B) (UG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	TUR-BID-ITY (JTU)	DIS-SOLVED OXYGEN (MG/L)
OCT.										
14...	--	346	.47	10.3	--	--	--	--	--	--
14...	--	--	--	--	--	680	8.1	9.0	--	11.0
NOV.										
11...	--	440	.60	26.1	--	--	--	4.5	--	--
11...	--	--	--	--	--	750	7.4	4.5	--	12.8
DEC.										
08...	0	436	.59	23.5	.3	--	--	.5	--	--
08...	--	--	--	--	--	600	8.1	.5	--	15.8
JAN.										
06...	--	--	--	--	--	810	7.8	.0	--	21.6
06...	--	568	.77	--	--	--	--	--	--	--
FEB.										
08...	--	444	.60	6.23	--	--	--	--	--	--
08...	--	--	--	--	--	900	7.2	.0	--	6.8
MAR.										
08...	0	176	.24	40.9	.1	--	--	.0	--	--
08...	--	--	--	--	--	210	7.3	.0	--	11.8
APR.										
11...	--	354	.48	4.49	--	--	--	12.0	--	--
11...	--	--	--	--	--	650	8.4	12.0	--	12.4
MAY										
09...	--	454	.62	113	--	--	--	--	--	--
09...	--	--	--	--	--	710	8.5	12.0	--	10.4
JUNE										
06...	0	378	.51	43.9	.3	--	--	23.5	--	--
06...	--	--	--	--	--	500	7.9	23.5	--	9.4
JULY										
12...	--	164	.22	252	--	--	--	--	95	--
12...	--	--	--	--	--	260	7.2	22.5	--	5.4
AUG.										
10...	--	358	.49	56.1	--	--	--	--	70	--
10...	--	--	--	--	--	590	8.0	19.0	--	9.4
SEP.										
21...	0	416	.57	74.1	.2	--	--	--	60	--
21...	--	--	--	--	--	650	8.1	18.0	--	9.0

06608505 SOLDIER RIVER NEAR MONDAMIN, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND (MG/L)	FECAL COLIFORM (COL. PER 100 ML)	STREPTOCOCCI (COLONIES PER 100 ML)	CYANIDE (CN) (MG/L)	ALDRIN (UG/L)	CHLORDANE (UG/L)	DDD (UG/L)	DDE (UG/L)	DDT (UG/L)
OCT. 14...	109	3.2	120	--	--	--	--	--	--	--
NOV. 11...	102	3.0	380	--	--	--	--	--	--	--
DEC. 08...	--	--	--	--	.00	.00	.0	.00	.00	.00
08...	107	2.2	630	2100	--	--	--	--	--	--
JAN. 06...	155	5.4	20	--	--	--	--	--	--	--
FEB. 08...	48	3.9	50	--	--	--	--	--	--	--
MAR. 08...	--	--	--	--	.02	--	--	--	--	--
08...	83	>7.8	2600	27000	--	--	--	--	--	--
APR. 11...	119	2.7	15	--	--	--	--	--	--	--
MAY 09...	103	7.3	12000	--	--	--	--	--	--	--
JUNE 06...	--	--	--	--	.01	.00	.0	.00	.00	.00
06...	113	2.2	800	270	--	--	--	--	--	--
JULY 12...	63	5.2	85000	--	--	--	--	--	--	--
AUG. 10...	103	1.4	6800	--	--	--	--	--	--	--
SEP. 21...	97	4.1	13000	--	--	--	--	--	--	--

DATE	DIELDRIN (UG/L)	ENDRIN (UG/L)	HEPTACHLOR (UG/L)	HEPTACHLOR EPOXIDE (UG/L)	LINDANE (UG/L)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)	DISSOLVED ARSENIC (AS) (UG/L)	DISSOLVED BERYLLIUM (BE) (UG/L)
DEC. 08...	.00	.00	.00	.00	.00	.00	.00	.00	0	0
MAR. 08...	--	--	--	--	--	.08	.00	.00	10	20
JUNE 06...	.01	.00	.00	.00	.00	.14	.00	.00	9	0
SEP. 21...	--	--	--	--	--	--	--	--	7	--

DATE	DISSOLVED CADMIUM (CD) (UG/L)	DISSOLVED CHROMIUM (CR) (UG/L)	DISSOLVED COPPER (CU) (UG/L)	DISSOLVED LEAD (PB) (UG/L)	DISSOLVED MERCURY (HG) (UG/L)	DISSOLVED MOLYBDENUM (MO) (UG/L)	DISSOLVED NICKEL (NI) (UG/L)	DISSOLVED SELENIUM (SE) (UG/L)	DISSOLVED SILVER (AG) (UG/L)	DISSOLVED ZINC (ZN) (UG/L)
DEC. 08...	1	0	8	30	<.5	1	3	2	0	50
MAR. 08...	0	0	7	4	<.5	7	10	0	1	80
JUNE 06...	1	0	5	27	<.5	1	4	2	0	80
SEP. 21...	0	32	6	0	<.5	--	--	4	1	50

DATE	FLOATING ALGAE MATS (SEVERITY)	FLOATING DEBRIS (SEVERITY)	DETERGENT SUDS (SEVERITY)	DEAD FISH (SEVERITY)	FLOATING GARBAGE (SEVERITY)	GAS BUBBLES (SEVERITY)	FLOATING OR SOLID ICE COVER (SEVERITY)	ATMOSPHERIC ODOR (SEVERITY)	OIL-GREASE (SEVERITY)	FRESH FLOATING SEWAGE SOLIDS (SEVERITY)	FLOATING SLUDGE (SEVERITY)
OCT. 14...	0	0	0	0	0	0	0	0	0	0	0
NOV. 11...	0	0	0	0	0	0	0	0	0	0	0
DEC. 08...	0	0	0	0	0	0	0	0	0	0	0
JAN. 06...	0	0	0	0	0	0	2	0	0	0	0
FEB. 08...	0	0	0	0	0	0	4	0	0	0	0
MAR. 08...	0	0	0	0	0	0	4	0	0	0	0
APR. 11...	0	0	0	0	0	0	1	0	0	0	0
MAY 09...	0	0	0	0	0	0	0	0	0	0	0
JUNE 06...	0	0	0	0	0	0	0	0	0	0	0

06610000 Missouri River at Omaha, Nebraska

LOCATION.--Lat 41°15'32", long 95°55'20", in SE1/4 NW1/4 sec.23, T.15 N., R.13 E., Douglas County, 275 ft downstream from Interstate 480 highway bridge in Omaha, and at mile 615.9.

DRAINAGE AREA.--322,800 sq mi, approximately.

PERIOD OF RECORD.--Water temperatures: October 1971 to September 1972 (partial-record station).
Sediment records: October 1971 to September 1972.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 1,410 mg/l July 18; minimum daily, 199 mg/l Dec. 21.
Sediment discharge: Maximum daily, 254,000 tons July 18; minimum daily, 4,860 tons Jan. 18.

REMARKS.--Flow affected by ice Jan. 19, 20. Sediment samples collected at bridge 15.5 miles downstream from gaging station. Sediment records published by the Corps of Engineers during the period April 1939 to September 1971.

COOPERATION.--Sediment samples collected and analyzed and water temperatures collected by the Corps of Engineers prior to July 1, 1972.

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	10.5	---	---	---	---	---	11.5	18.5	---	---	---
2	---	---	3.0	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	23.0	---
4	20.5	8.0	---	---	---	---	---	11.0	---	---	---	---
5	---	---	---	---	---	---	7.0	---	23.5	21.5	---	---
6	---	---	3.0	---	---	3.5	---	---	---	---	---	---
7	17.0	---	---	---	---	---	---	---	---	---	---	---
8	---	5.0	---	---	---	---	---	7.0	23.0	---	---	---
9	---	---	0.5	---	---	---	---	---	---	---	---	---
10	---	---	---	0.5	---	---	7.0	---	---	---	---	---
11	14.0	6.5	---	---	---	---	---	13.0	---	---	---	---
12	---	---	---	---	---	---	---	---	22.0	---	---	---
13	---	---	---	---	---	3.5	---	---	---	25.0	---	---
14	14.0	---	---	---	---	---	---	---	---	---	27.0	23.0
15	---	11.0	1.0	---	---	---	---	15.0	23.0	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	0.5	---	---	12.0	---	---	24.0	26.0	---
18	16.5	7.0	---	---	---	---	---	17.0	---	---	---	24.0
19	---	---	---	---	---	---	---	---	21.0	---	---	---
20	---	---	---	---	---	7.0	10.5	---	---	---	---	---
21	14.5	---	0.5	---	---	---	---	---	---	---	---	---
22	---	4.5	---	---	---	---	---	23.0	19.0	---	---	---
23	---	---	---	---	---	5.5	---	---	---	---	---	---
24	---	---	---	---	---	---	10.5	---	---	32.0	---	---
25	---	---	---	---	---	---	---	18.0	---	---	21.0	---
26	16.5	5.0	---	---	---	---	---	---	21.0	---	---	---
27	---	---	---	---	---	5.5	10.0	---	---	25.5	---	---
28	13.5	---	---	---	---	---	---	---	---	---	25.0	---
29	---	3.5	---	---	---	---	---	---	22.0	---	---	---
30	---	---	---	---	---	4.5	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	25.5	23.0	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
YEAR	14.0											

06610000 MISSOURI RIVER AT OMAHA, NEBR.--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	49500	555	74200	54500	458	67400	51100	428	59100
2	49700	563	75500	53900	459	66800	50600	630	86100
3	50200	575	77900	55000	565	83900	49100	610	80900
4	50500	552	75300	54700	660	97500	47800	558	72000
5	50700	530	72600	53800	582	84500	46400	472	59100
6	50200	488	66100	55300	578	86300	44300	410	49000
7	51600	495	69000	55600	710	107000	41900	465	52600
8	52700	520	74000	53500	787	114000	40200	559	60700
9	51900	491	68800	54600	728	107000	37400	610	61600
10	51400	466	64700	53900	736	107000	34500	585	54500
11	49200	387	51400	56400	837	127000	32500	550	48300
12	48600	390	51200	55900	780	118000	30700	505	41900
13	49800	551	74100	55200	615	91700	28700	455	35300
14	49300	608	80900	53500	451	65100	27200	435	31900
15	49700	505	67800	53900	369	53700	25700	429	29800
16	49400	409	54600	53900	377	54900	23400	424	26800
17	49700	397	53300	54800	435	64400	23300	386	24300
18	50300	406	55100	56500	501	76400	22700	413	25300
19	51600	472	65800	55600	515	77300	22600	382	23300
20	52000	628	88200	55200	430	64100	23400	278	17600
21	51700	650	90700	55600	335	50300	22900	199	12300
22	51300	582	80600	55500	280	42000	22400	222	13400
23	51800	519	72600	56200	289	43900	21100	270	15400
24	51800	490	68500	56400	351	53500	22400	256	15500
25	51800	490	68500	55900	448	67600	23100	258	16100
26	52800	521	74300	54900	470	69700	23100	259	16200
27	53200	622	89300	54800	392	58000	22800	272	16700
28	53000	589	84300	54000	308	44900	22000	296	17600
29	54100	595	86900	53700	242	35100	21900	300	17700
30	54300	581	85200	52500	240	34000	22900	276	17100
31	54100	500	73000	--	--	--	22800	281	17300
TOTAL	1587900	--	2234400	1645200	--	2213000	950900	--	1115400

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	22200	298	17900	21600	481	28100	39100	590	62300
2	22400	283	17100	21600	454	26500	30000	463	37500
3	22500	296	18000	20800	417	23400	24200	372	24300
4	21500	374	21700	19700	365	19400	24000	378	24500
5	20700	413	23100	19200	340	17600	23800	420	27000
6	21400	399	23100	19800	355	19000	22700	475	29100
7	21700	398	23300	20200	381	20800	32200	705	61300
8	22800	410	25200	20500	425	23500	35400	830	79300
9	22600	465	28400	20400	425	23400	29800	780	62800
10	22600	528	32200	20400	400	22000	28400	770	59000
11	22600	540	33000	20000	379	20500	28000	790	59700
12	22800	550	33900	20400	380	20900	30600	960	79300
13	22500	530	32200	21000	400	22700	34500	1190	111000
14	18000	481	23400	21300	408	23500	35400	1300	124000
15	9980	375	10100	21400	408	23600	33900	1200	110000
16	9270	423	10600	21400	424	24500	33800	1030	94000
17	6900	412	7680	21900	457	27000	34800	940	88300
18	5460	330	4860	22600	469	28600	36500	945	93100
19	26000	376	26400	21700	398	23300	38600	1020	106000
20	29000	453	35500	21100	358	20400	39500	1110	118000
21	13400	360	13000	24400	417	27500	40200	1040	113000
22	14400	402	15600	26300	445	31600	41100	835	92700
23	17500	492	23200	24900	403	27100	42800	695	80300
24	19300	531	27700	23100	398	24800	41500	667	74700
25	17700	493	23600	24400	451	29700	41100	651	72200
26	16400	440	19500	23500	412	26100	40400	652	71100
27	15000	392	15900	22800	380	23400	41000	641	71000
28	17000	415	19000	24400	448	29500	41200	692	77000
29	18400	443	22000	32800	542	48000	41500	778	87200
30	19800	473	25300	--	--	--	41700	843	94900
31	21400	486	28100	--	--	--	41200	828	92100
TOTAL	583210	--	680540	643600	--	726400	1088900	--	2376700

06610000 MISSOURI RIVER AT OMAHA, NEBR.--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

		APRIL			MAY			JUNE	
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	39000	650	68400	50500	717	97800	50000	496	67000
2	43100	587	68300	64200	838	145000	49400	457	61000
3	45900	592	73400	55200	942	140000	49700	442	59300
4	46900	542	68600	49300	995	132000	50100	456	61700
5	46000	482	59900	51500	907	126000	50800	515	70600
6	45900	487	60400	56200	808	123000	51600	620	86400
7	45700	522	64400	56300	827	126000	50600	745	102000
8	45400	590	72300	47900	885	114000	51300	858	119000
9	45500	631	77500	44100	856	102000	55600	908	136000
10	45300	642	78500	45700	755	93200	54500	923	136000
11	44000	605	71900	45000	651	79100	52100	892	125000
12	44600	575	69200	45000	582	70700	54400	850	125000
13	44700	602	72700	47500	565	72500	54000	827	121000
14	44300	590	70600	49100	599	79400	52600	830	118000
15	43600	542	63800	47100	673	85600	51000	885	122000
16	43200	458	53400	44900	662	80300	50400	950	129000
17	41200	391	43500	44200	581	69300	50200	1010	137000
18	42700	379	43700	45200	570	69600	53700	1050	152000
19	43500	412	48400	45000	613	74500	50800	1090	150000
20	43600	498	58600	45300	631	77200	50300	985	134000
21	45300	578	70700	45200	587	71600	49000	665	88000
22	45200	635	77500	45600	526	64800	47900	440	56900
23	45300	685	83800	48200	533	69400	46600	419	52700
24	45100	718	87400	50200	682	92400	46200	413	51500
25	45500	687	84400	50900	884	121000	45300	402	49200
26	45800	631	78000	48900	949	125000	44800	395	47800
27	47400	632	80900	51900	926	130000	44100	402	47900
28	47600	647	83200	54300	845	124000	43700	534	63000
29	46100	619	77000	54400	747	110000	45400	768	94100
30	45400	615	75400	52500	662	93800	44400	682	81800
31	—	--	--	51600	578	80500	—	—	--
TOTAL	1342800	--	2085800	1532900	--	3039700	1490500	--	2844900

		JULY			AUGUST			SEPTEMBER	
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	44200	605	72200	52400	523	74000	51000	421	58000
2	46200	561	70000	54900	613	90900	51100	421	58100
3	46400	521	65300	53700	682	98900	49900	441	59400
4	45500	482	59200	51700	627	87500	48200	483	62900
5	44500	438	52600	50200	542	73500	48700	561	73800
6	44000	403	47900	50600	452	61800	48500	509	66700
7	45000	405	49200	51500	395	54900	48600	473	62100
8	46100	433	53900	52400	401	56700	49600	604	80900
9	46900	455	57600	51700	425	59300	48500	580	76000
10	48100	522	67800	50200	445	60300	49000	552	73000
11	48800	625	82400	49800	448	60200	61900	685	114000
12	52400	1080	153000	49400	420	56000	61200	712	118000
13	49600	980	131000	49100	390	51700	48300	716	93400
14	49600	895	120000	47500	376	48200	43400	662	77600
15	48900	795	105000	48700	367	48300	48400	631	82500
16	49000	690	91300	50200	345	46800	50100	600	81200
17	50400	630	85700	50700	306	41900	50000	564	76100
18	66800	1410	254000	49800	293	39400	50900	540	74200
19	51400	1300	180000	49300	300	39900	50500	548	74700
20	44000	1060	126000	48500	333	43600	50600	613	83700
21	48600	1090	143000	49300	388	51600	50900	680	93500
22	53900	1180	172000	49300	432	57500	50700	617	84500
23	50800	1050	144000	49700	435	58400	49700	550	73800
24	46000	600	74500	49900	403	54300	49600	492	65900
25	50600	695	95000	50700	366	50100	49200	461	61200
26	55500	985	148000	50800	332	45500	50800	489	67100
27	54500	1010	149000	50600	322	44000	52200	563	79300
28	53100	833	119000	50000	333	45000	50900	627	86200
29	52700	715	102000	49800	355	47700	50400	566	77000
30	52200	589	83000	50200	395	53500	50300	515	69900
31	52100	513	72200	50600	432	59000	--	--	--
TOTAL	1537800	--	3225800	1563200	--	1760400	1513100	—	2304700

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	15480010
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	24607740

06610000 MISSOURI RIVER AT OMAHA, NEBR.--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
OCT.							
14...	14.0	--	49300	616	82000	3	15
28...	13.5	--	52700	585	83200	--	19
NOV.							
11...	6.5	--	56200	854	130000	7	17
22...	4.5	--	55700	276	41500	--	46
DEC.							
06...	3.0	--	44500	403	48400	5	26
MAR.							
13...	3.5	--	34100	1200	110000	--	64
23...	5.5	--	47800	672	77700	11	52
APR.							
10...	7.0	--	45700	649	80100	--	25
17...	12.0	--	41300	383	42700	11	40
20...	10.5	--	43600	502	59100	--	40
24...	10.5	--	44900	723	87600	--	29
27...	10.0	--	47300	636	81200	5	27
MAY							
01...	11.5	--	48300	751	97900	10	37
04...	11.0	--	49700	1010	136000	--	64
08...	7.0	--	48400	900	118000	15	55
11...	13.0	--	45500	638	78400	--	42
15...	15.0	--	47300	688	87900	9	37
18...	17.0	--	44900	569	69000	--	32
22...	23.0	--	45100	519	63200	--	35
25...	18.0	--	51800	893	125000	17	55
JUNE							
01...	18.5	--	50800	495	67900	--	39
05...	23.5	--	50400	514	69900	5	33
08...	23.0	--	49900	862	116000	--	43
12...	22.0	--	54600	852	126000	11	35
19...	21.0	--	50900	1110	153000	--	70
22...	19.0	--	48100	430	55800	16	46
26...	21.0	--	44900	396	48000	--	37
29...	22.0	--	45800	811	100000	--	61
JULY							
10...	25.0	--	47700	527	67900	--	25
20...	24.5	3	43700	--	--	--	--
20...	24.5	--	43700	1040	123000	--	75
AUG.							
10...	21.0	--	50800	445	61000	--	40
22...	25.0	--	49700	436	58500	--	30
22...	25.0	3	49700	--	--	--	--
SEP.							
05...	22.5	--	48700	579	76100	--	19
21...	21.0	--	49600	694	92900	--	21

DATE	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM
OCT.							
14...	32	97	100	--	--	--	--
NOV.							
11...	33	99	100	--	--	--	--
DEC.							
06...	45	100	--	--	--	--	--
MAR.							
23...	69	99	100	--	--	--	--
APR.							
17...	60	100	--	--	--	--	--
27...	49	99	100	--	--	--	--
MAY							
01...	50	98	100	--	--	--	--
04...	74	100	--	--	--	--	--
08...	69	100	--	--	--	--	--
11...	56	93	100	--	--	--	--
15...	53	89	100	--	--	--	--
25...	73	100	--	--	--	--	--
JUNE							
05...	52	100	--	--	--	--	--
12...	51	100	--	--	--	--	--
22...	72	100	--	--	--	--	--
JULY							
10...	44	99	100	--	--	--	--
20...	--	--	--	2	74	99	100
AUG.							
10...	60	100	--	--	--	--	--
22...	--	--	--	2	67	98	100
SEP.							
05...	34	99	100	--	--	--	--

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBRASKA
(International Hydrological Decade River Station)

LOCATION.--Lat 40°40'55", long 95°50'48", in NW1/4 NE1/4 sec.9, T.8 N., R.14 E., Otto County, at Waubonsie Highway Bridge at Nebraska City, and at mile 562.6.

DRAINAGE AREA.--414,400 sq mi, approximately.

PERIOD OF RECORD.--Sediment records: October 1971 to September 1972.

EXTREMES.--Current year: Sediment concentrations: Maximum daily, 2,880 mg/l June 14; minimum daily, 150 mg/l Jan. 17.

Sediment discharge: Maximum daily, 587,000 tons May 2; minimum daily, 4,050 tons Jan. 17.

REMARKS.--Flow affected by ice Jan. 13-18, 24-27, Feb. 3-13. Records of chemical analyses and water temperatures for the current year are published in Part 2, Water Resources Data for Nebraska. Sediment records published by the Corps of Engineers during the period August 1957 to September 1971.

COOPERATION.--Sediment samples collected and analyzed and water temperatures collected by the Corps of Engineers prior to July 1, 1972.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	50300	433	58800	60600	877	143000	56600	763	117000
2	52000	435	61100	60600	890	146000	55900	805	121000
3	53100	430	61600	60600	814	133000	54800	827	122000
4	53400	426	61400	61000	695	114000	53400	788	114000
5	53800	435	63200	58700	629	99700	51700	703	98100
6	52000	433	60800	59000	622	99100	49600	582	77900
7	52000	443	62200	61000	607	100000	47500	566	72600
8	53800	495	71900	59400	551	88400	45800	605	74800
9	53800	513	74500	58400	528	83300	44200	639	76300
10	54200	534	78100	56600	522	79800	41800	611	69000
11	52400	531	75100	58700	590	93500	38800	567	59400
12	51000	529	72800	59000	610	97200	36800	505	50200
13	51400	554	76900	59000	578	92100	34100	391	36000
14	52400	584	82600	56600	525	80200	31400	402	34100
15	52800	593	84500	56200	498	75600	29700	443	35500
16	53100	589	84400	56600	488	74600	27200	478	35100
17	52400	560	79200	58000	501	78500	27200	467	34300
18	52400	533	75400	60600	493	80700	27200	437	32100
19	52000	547	76800	61400	475	78700	27400	418	30900
20	53800	577	83800	61400	500	82900	27400	434	32100
21	54500	640	94200	61000	518	85300	27400	505	37400
22	53800	683	99200	61800	548	91400	27200	608	44700
23	54200	628	91900	61400	592	98100	26600	681	48900
24	54800	507	75000	61800	612	102000	26800	662	47900
25	53400	400	57700	61400	622	103000	29000	731	57200
26	54500	450	66200	61000	632	104000	28400	712	54600
27	57300	526	81400	61400	649	108000	28400	755	57900
28	58000	592	92700	60600	664	109000	27200	811	59600
29	60200	690	112000	59000	687	109000	26100	833	58700
30	61800	782	130000	58400	723	114000	27000	805	58700
31	61400	837	139000	--	--	--	26800	770	55700
TOTAL	1676000	--	2484400	1791200	--	2944100	1109400	--	1903700

C6807000 MISSOURI RIVER AT NEBRASKA CITY, NEBR.--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	25900	748	52300	24500	505	33400	57000	2050	315000
2	25600	720	49800	24500	560	37000	51700	1760	246000
3	26100	702	49500	24000	520	33700	37100	940	94200
4	24500	682	45100	22500	525	31900	33400	630	56800
5	22000	648	38500	22000	550	32700	31800	530	45500
6	22700	682	41800	23000	610	37900	29700	650	52100
7	23400	728	46000	23500	710	45000	34400	1210	112000
8	24300	763	50100	24000	740	48000	46800	2590	327000
9	25200	788	53600	24000	710	46000	41200	1660	185000
10	25200	800	54400	24000	690	44700	38200	970	100000
11	25400	885	60700	24000	710	46000	36600	570	56300
12	25900	1070	74800	23500	650	41200	36800	380	37800
13	25000	1260	85100	24000	700	45400	40900	850	93900
14	22000	1330	79000	25400	770	52800	43900	1120	133000
15	12000	990	32100	27400	860	63600	42100	960	109000
16	10000	500	13500	27700	965	72200	40900	920	102000
17	10000	150	4050	28400	1100	84300	41500	1130	127000
18	12000	210	6800	29000	1320	103000	43300	1150	134000
19	22700	215	13200	28800	1230	95600	44800	1240	150000
20	41500	395	44300	27700	880	65800	46800	1210	153000
21	21600	315	18400	30600	540	44600	46800	1050	133000
22	19000	335	17200	34800	635	59700	48600	990	130000
23	21200	500	28600	35800	695	67200	50300	930	126000
24	22000	670	39800	33400	655	59100	48600	970	127000
25	20000	700	37800	33400	660	59500	47800	945	122000
26	19000	615	31500	33400	650	58600	48200	935	122000
27	19000	520	26700	32800	590	52300	47500	940	121000
28	20600	470	26100	33400	555	50000	48600	890	117000
29	22000	480	28500	42100	1040	118000	48200	930	121000
30	22500	440	26700	--	--	--	48200	1160	151000
31	23600	435	27700	--	--	--	48200	1040	135000
TOTAL	681900	—	1203650	811600	--	1629200	1349900	--	4034600

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	46100	890	111000	59000	735	117000	57600	590	91800
2	47800	865	112000	80800	2690	587000	55600	490	73600
3	50300	905	123000	71000	2380	456000	54200	530	77600
4	52800	825	118000	62200	1530	257000	54500	650	95600
5	52400	645	91300	62200	1050	176000	55600	785	118000
6	52000	590	82800	78600	1030	219000	57000	950	146000
7	51700	650	90700	77600	1140	239000	57300	990	153000
8	50600	760	104000	68200	1290	238000	57000	945	145000
9	51400	920	128000	58000	1310	205000	60600	1010	165000
10	51700	1010	141000	55600	1240	186000	60600	1090	178000
11	51000	1070	147000	56600	1110	170000	57300	985	152000
12	50300	1140	155000	56200	950	144000	57600	840	131000
13	50000	1170	158000	58000	1040	163000	56600	1060	162000
14	48200	1150	150000	64200	1140	198000	59000	2880	459000
15	47500	1080	139000	66200	1200	214000	54800	2760	408000
16	48200	990	129000	61400	1020	169000	52400	2540	359000
17	46800	885	112000	58400	765	121000	51700	2000	279000
13	46800	830	105000	57300	580	89700	55200	2000	298000
19	49200	825	110000	57000	535	82300	54800	1760	260000
20	49600	820	110000	56600	515	78700	51700	1120	156000
21	52800	810	115000	55600	495	74300	51400	635	88100
22	52400	830	117000	53400	505	72800	51700	370	51600
23	51000	830	114000	55900	535	80700	51000	340	46800
24	48900	820	108000	57000	555	85400	50000	345	46600
25	48600	805	106000	62200	525	88200	49200	355	47200
26	48600	810	106000	62200	545	91500	48900	390	51500
27	51000	785	108000	61400	690	114000	48900	430	56800
28	52000	710	99700	62200	720	121000	46800	450	56900
29	51400	630	87400	64200	675	117000	48600	540	70900
30	52800	615	87700	61400	655	109000	48200	505	65700
31	--	--	--	59400	645	103000	--	--	--
TOTAL	1503900	--	3465600	1920000	--	5166600	1615800	--	4489700

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBR.--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	45400	530	65000	56600	780	119000	52000	820	115000
2	45800	565	69900	58700	790	125000	52400	795	112000
3	47200	580	73900	59800	905	146000	51700	700	97700
4	46100	565	70300	58400	825	130000	49600	600	80400
5	46800	535	67600	57300	735	114000	50000	530	71600
6	45400	535	65600	56600	795	121000	50300	495	67200
7	47500	530	68000	56600	570	87100	51000	460	63300
8	48600	530	69500	57300	625	96700	51700	450	62800
9	48900	505	66700	57600	675	105000	51000	555	76400
10	49200	490	65100	55900	705	106000	50300	810	110000
11	51400	590	81900	54500	725	107000	63400	1750	300000
12	55200	820	122000	54200	690	101000	74600	2220	447000
13	51000	750	103000	53100	645	92500	75000	2530	512000
14	51700	680	94900	52000	600	84200	55600	1500	225000
15	51700	700	97700	51400	580	80500	56600	1050	160000
16	50300	725	98500	52800	550	78400	57300	765	118000
17	50600	750	102000	51700	495	69100	55900	550	83000
18	68200	1170	215000	51700	475	66300	55200	470	70000
19	66200	1070	191000	51000	475	65400	54500	605	89000
20	50000	800	108000	51000	490	67500	54500	585	86100
21	52000	895	126000	50600	500	68300	54500	695	102000
22	56200	1110	168000	51700	505	70500	54200	910	133000
23	64600	1340	234000	52400	515	72900	54200	960	140000
24	53800	1130	164000	52400	545	77100	53800	1010	147000
25	55600	1230	185000	55200	660	98400	53800	1080	157000
26	60600	1810	296000	54200	660	96600	54500	1090	160000
27	61400	2030	337000	53800	585	85000	57300	1020	158000
28	61400	2170	360000	52800	560	79800	56200	875	133000
29	61000	1850	305000	52800	625	89100	55900	815	123000
30	59800	1440	233000	51700	680	94900	55600	780	117000
31	57300	800	124000	52000	755	106000	---	---	---
TOTAL	1660900	---	4427600	1677800	---	2900300	1662600	---	4316500

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	17461000
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	38965950

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMP-ERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM
OCT.										
01...	20.0	49600	431	57700	--	27	--	--	--	--
15...	15.0	52500	599	84900	10	20	40	75	98	100
NOV.										
02...	9.0	60600	962	148000	--	20	--	--	--	--
15...	11.0	56800	492	75500	8	28	51	81	93	100
26...	5.0	61100	636	105000	--	22	--	--	--	--
DEC.										
09...	1.5	44800	644	77900	--	23	--	--	--	--
16...	1.0	27300	481	35500	5	20	37	97	100	--
FEB.										
18...	.5	28900	1330	104000	1	10	19	55	81	100
28...	4.5	33000	504	44900	--	39	55	98	100	--
MAR.										
08...	1.5	47800	2770	357000	--	69	--	--	--	--
10...	3.5	38100	948	97500	--	55	--	--	--	--
14...	4.0	44000	1170	139000	--	56	--	--	--	--
22...	7.0	47800	1020	132000	--	45	--	--	--	--
23...	6.5	50000	939	127000	11	40	54	99	100	--
25...	6.0	48300	921	120000	--	34	--	--	--	--
27...	6.0	47300	951	121000	--	32	--	--	--	--
29...	5.0	47600	898	115000	--	26	--	--	--	--
30...	5.0	48100	1190	155000	--	22	--	--	--	--
APR.										
10...	8.0	51600	1010	141000	5	18	30	84	89	100
24...	10.5	49200	819	109000	--	21	--	--	--	--
MAY										
01...	11.5	56700	646	98900	--	46	--	--	--	--
02...	11.5	85600	3480	804000	23	72	80	98	100	--
05...	14.0	61300	1020	169000	--	71	--	--	--	--
08...	11.5	69400	1310	245000	23	64	75	93	100	--
12...	13.5	55600	904	136000	--	37	--	--	--	--
15...	14.0	67200	1230	223000	10	46	57	78	92	100
18...	19.5	57200	567	87600	--	51	--	--	--	--
22...	21.0	53200	502	72100	--	45	--	--	--	--
30...	20.0	61200	650	107000	--	58	--	--	--	--
JUNE										
02...	21.5	55300	472	70500	--	55	--	--	--	--
06...	23.5	57400	974	151000	--	74	--	--	--	--
09...	24.0	61500	990	164000	28	70	79	99	100	--
12...	23.0	57900	801	125000	--	53	--	--	--	--

06807000 MISSOURI RIVER AT NEBRASKA CITY, NEBR.--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	NUMBER OF SAMPLING POINTS	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
JUNE									
16...	22.0	--	52200	2570	362000	--	85	--	--
19...	21.5	--	55600	1910	287000	34	85	93	99
22...	23.0	--	52200	360	50700	--	53	--	--
29...	23.0	--	49400	581	77500	5	26	43	77
JULY									
05...	21.0	--	46700	1540	194000	--	15	25	87
21...	26.0	--	51100	877	121000	--	77	--	--
21...	26.0	3	51100	--	--	--	--	--	--
AUG.									
11...	23.5	--	54300	734	108000	--	26	44	96
24...	24.0	3	52500	536	76000	--	26	--	--
SEP.									
08...	26.0	--	51900	424	59400	--	32	54	97
18...	28.0	--	55100	431	64100	--	47	--	--

DATE	SUS. SED. FALL DIAM. % FINER THAN .500 MM	SUS. SED. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. FALL DIAM. % FINER THAN .125 MM	BED MAT. FALL DIAM. % FINER THAN .250 MM	BED MAT. FALL DIAM. % FINER THAN .500 MM	BED MAT. FALL DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
JUNE									
19...	100	--	--	--	--	--	--	--	--
29...	99	100	--	--	--	--	--	--	--
JULY									
05...	99	100	--	--	--	--	--	--	--
21...	--	--	3	88	98	100	--	--	--
AUG.									
11...	100	--	--	--	--	--	--	--	--
24...	--	--	2	26	47	82	85	91	93
SEP.									
08...	99	100	--	--	--	--	--	--	--

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA

LOCATION.--Lat 41°00'41", long 95°14'07", in NW1/4 SE1/4 sec.29, T.72 N., R.38 W., Montgomery County, at gage on Coolbaugh bridge in Red Oak, and 0.2 mile upstream from Red Oak Creek.
DRAINAGE AREA.--894 sq mi.
PERIOD OF RECORD.--Specific conductance: October 1968 to current year.
Water temperatures: October 1962 to current year.
Sediment records: October 1962 to current year.
EXTREMES.--Current year: Specific conductance: Maximum daily, 580 micromhos Dec. 12, 13, Jan. 16; minimum daily, 120 micromhos Sept. 12.
Water temperatures: Maximum, 34.0°C Aug. 23; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 17,000 mg/l May 27; minimum daily, 11 mg/l Oct. 5, Feb. 5.
Sediment discharge: Maximum daily, 252,000 tons Sept. 11; minimum daily, 0.81 ton Oct. 12.

Period of record: Specific conductance: Maximum daily, 580 micromhos Dec. 12, 13, 1971, Jan. 16, 1972; minimum daily, 120 micromhos Sept. 12, 1972.
Water temperatures: Maximum, 34.0°C July 20, 1963, Aug. 5, 1968, Aug. 23, 1972; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 48,900 mg/l May 26, 1964; minimum daily, 3 mg/l Oct. 11, 25, 1966.
Sediment discharge: Maximum daily, 970,000 tons May 26, 1964; minimum daily, 0.4 ton Jan. 18, 19, 1964, uct. 11, 25, 1966.
REMARKS.--Flow affected by ice Dec. 11-17, Dec. 27 to Feb. 22.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	480	360	490	490	430	170	480	470	480	540	480	450
2	470	370	500	490	410	230	500	450	480	540	480	360
3	480	340	510	490	410	250	500	460	500	550	220	470
4	470	380	510	480	420	300	500	480	500	560	300	480
5	470	420	510	470	410	330	500	490	500	560	430	480
6	470	470	500	440	400	380	490	400	500	560	400	480
7	470	480	500	420	430	400	490	300	510	540	---	480
8	500	500	500	400	420	---	480	340	520	540	290	480
9	490	480	550	420	410	360	470	390	---	570	390	480
10	490	500	530	440	410	350	450	410	530	570	450	450
11	480	480	520	500	400	380	480	415	530	550	480	190
12	480	420	580	420	410	410	480	430	530	530	480	120
13	490	500	580	400	390	410	480	400	530	520	480	---
14	480	510	550	490	390	400	490	400	460	300	500	180
15	490	530	530	500	410	450	480	430	440	510	500	350
16	490	470	530	580	420	430	480	440	500	520	500	410
17	480	470	560	550	480	450	500	450	530	520	500	450
18	490	380	520	530	440	450	500	450	---	410	500	450
19	450	380	540	520	370	480	510	450	500	---	500	460
20	465	430	490	500	390	480	530	460	500	460	500	490
21	450	490	520	490	390	450	450	460	520	490	480	480
22	470	480	470	490	210	480	450	460	530	510	480	480
23	480	480	500	480	220	480	500	450	530	510	490	490
24	480	490	480	450	250	490	510	440	530	510	500	490
25	490	500	470	480	220	490	515	440	510	500	480	490
26	490	500	470	500	210	490	480	440	530	290	480	480
27	460	490	430	450	230	490	490	---	530	---	480	470
28	470	470	410	450	---	500	440	450	530	300	490	450
29	420	500	390	440	---	510	---	460	530	450	490	480
30	360	480	410	460	---	510	460	460	540	460	500	490
31	380	---	440	430	---	500	---	470	---	450	500	---
MONTH	469	458	500	473	370	417	486	435	511	494	458	431
YEAR	459											

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.0	8.0	2.0	0.0	0.0	0.0	6.0	15.0	18.0	29.0	23.0	21.0
2	25.0	7.0	2.0	0.0	0.0	0.0	10.0	14.0	24.0	28.0	22.0	16.0
3	19.0	7.0	2.0	0.0	0.0	0.0	8.0	---	24.0	28.0	22.0	20.0
4	14.0	7.0	2.0	0.0	0.0	0.0	10.0	15.0	24.0	27.0	20.0	21.0
5	15.0	8.0	3.0	0.0	0.0	1.0	12.0	---	23.0	25.0	24.0	24.0
6	13.0	6.0	4.0	0.0	0.0	2.0	17.0	14.0	29.0	22.0	26.0	21.0
7	13.0	5.0	3.0	0.0	0.0	4.5	10.0	10.0	28.0	25.0	22.0	26.0
8	12.0	3.0	3.0	1.0	0.0	2.0	8.0	10.0	28.0	21.0	21.0	25.0
9	13.0	8.0	0.0	1.0	0.0	3.0	18.0	15.0	---	30.0	19.0	21.0
10	12.0	7.0	3.0	1.0	0.0	8.0	18.0	15.0	28.0	25.0	19.0	24.0
11	17.0	5.0	1.0	1.0	0.0	8.0	16.0	21.0	28.0	23.0	16.0	20.0
12	11.0	10.0	1.0	1.0	0.0	7.0	19.0	16.0	28.0	22.0	30.0	20.5
13	11.0	10.0	0.0	0.0	0.0	8.0	14.0	16.0	27.0	23.0	30.0	21.0
14	12.0	13.0	1.0	0.0	0.0	9.0	10.0	16.0	23.0	26.0	32.0	20.0
15	20.0	10.0	1.0	0.0	0.0	11.0	14.0	16.0	24.0	24.0	32.0	20.0
16	16.0	13.0	1.0	0.0	0.0	9.0	19.0	22.0	25.0	25.0	32.0	20.0
17	21.0	12.0	0.0	0.0	1.0	8.0	19.0	24.0	24.0	23.0	32.0	21.0
18	18.0	8.0	1.0	1.0	0.0	8.0	21.0	24.0	23.0	21.0	32.0	25.0
19	16.0	5.0	1.0	0.0	1.0	11.0	13.0	24.0	24.0	22.0	32.0	24.0
20	13.0	9.0	0.0	0.0	1.0	13.0	10.0	22.0	22.0	23.0	32.0	24.0
21	14.0	5.0	1.0	0.0	1.0	11.0	11.0	26.0	22.0	25.0	32.0	20.0
22	14.0	2.0	0.0	2.0	1.0	11.0	13.0	24.0	25.0	30.0	23.0	16.0
23	15.0	2.0	1.0	0.0	1.0	10.0	15.0	20.0	26.0	30.0	34.0	17.0
24	15.0	4.0	4.0	0.0	0.0	6.0	12.0	22.0	22.0	26.0	21.0	18.0
25	17.0	5.0	2.0	0.0	1.0	10.0	15.0	23.0	28.0	27.0	21.0	19.0
26	15.0	6.0	0.0	0.0	0.0	10.0	10.0	24.0	24.0	23.0	23.0	17.0
27	15.0	4.0	0.0	0.0	5.0	8.0	9.0	20.0	23.0	24.0	25.0	15.0
28	10.0	3.0	0.0	0.0	3.0	7.0	14.0	21.0	28.0	22.0	21.0	16.0
29	8.0	2.0	0.0	0.0	2.0	8.0	16.0	20.0	27.0	26.0	25.0	13.0
30	9.0	1.0	0.0	0.0	---	4.0	16.0	18.0	30.0	28.0	33.0	11.0
31	9.0	---	2.0	0.0	---	6.0	---	17.0	---	23.0	22.0	---
MONTH	14.5	6.5	1.5	0.5	0.5	6.5	13.5	19.0	25.0	25.0	25.5	20.0
YEAR	13.0											

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	27	24	1.7	252	885	602	73	49	9.7
2	27	25	1.8	318	995	854	69	37	6.9
3	28	20	1.5	298	1260	1010	75	44	8.9
4	26	12	.84	142	645	247	73	44	8.7
5	28	11	.83	95	350	90	75	39	7.9
6	26	18	1.3	74	155	31	77	43	8.9
7	24	21	1.4	62	65	11	80	32	6.9
8	29	39	3.1	51	36	5.0	84	54	12
9	28	15	1.1	55	43	6.4	86	94	22
10	29	14	1.1	54	32	4.7	80	56	12
11	26	15	1.1	53	36	5.2	76	49	10
12	25	12	.81	49	36	4.8	68	45	8.3
13	26	21	1.5	44	37	4.4	42	55	6.2
14	26	15	1.1	41	58	6.4	60	42	6.8
15	25	20	1.4	35	75	7.1	80	65	14
16	24	17	1.1	35	101	9.5	70	52	9.8
17	23	18	1.1	107	720	208	55	70	10
18	34	61	5.6	269	1400	1020	43	143	17
19	38	39	4.0	224	1280	774	86	92	21
20	46	37	4.6	124	515	172	82	40	8.9
21	45	35	4.3	95	105	27	69	34	6.3
22	45	27	3.3	78	83	17	69	57	11
23	41	19	2.1	69	57	11	80	45	9.7
24	37	28	2.8	70	51	9.6	85	45	10
25	34	21	1.9	71	46	8.8	89	59	14
26	33	19	1.7	71	53	10	85	40	9.2
27	44	37	4.4	73	40	7.9	24	64	4.1
28	51	22	3.0	75	39	7.9	35	45	4.3
29	75	52	11	75	39	7.9	50	40	5.4
30	137	420	155	71	49	9.4	55	43	6.4
31	250	940	635	--	--	--	60	53	8.6
TOTAL	1357	--	861.48	3130	--	5189.0	2135	--	304.9

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	65	44	7.7	36	34	3.3	697	2500	4700
2	70	38	7.2	37	38	3.8	238	540	347
3	70	68	13	36	30	2.9	165	245	109
4	50	79	11	35	15	1.4	170	351	161
5	40	47	5.1	35	11	1.0	180	418	203
6	45	73	8.9	35	14	1.3	191	742	383
7	50	35	4.7	34	31	2.8	188	460	233
8	52	24	3.4	33	34	3.0	270	1220	889
9	54	26	3.8	32	19	1.6	144	535	208
10	56	35	5.3	31	26	2.2	135	445	162
11	65	65	11	31	24	2.0	135	292	106
12	80	95	21	31	30	2.5	144	258	100
13	70	67	13	32	19	1.6	152	271	111
14	50	50	6.8	34	16	1.5	154	257	107
15	30	50	4.1	38	24	2.5	154	261	109
16	35	33	3.1	38	21	2.2	205	685	379
17	40	31	3.3	40	35	3.8	160	655	283
18	45	23	2.8	45	54	6.6	141	298	113
19	50	20	2.7	50	127	17	129	164	57
20	53	13	1.9	55	131	19	120	153	50
21	50	14	1.9	150	3000	1220	116	159	50
22	48	12	1.6	350	570	539	119	128	41
23	46	28	3.5	222	260	156	112	103	31
24	44	42	5.0	421	635	722	103	71	20
25	40	27	2.9	619	820	1370	98	72	19
26	38	25	2.6	332	319	286	96	65	17
27	37	27	2.7	216	370	216	93	45	11
28	36	26	2.5	1050	4090	18800	94	45	11
29	35	38	3.6	1870	7890	44000	94	48	12
30	35	56	5.3	--	--	--	90	32	7.8
31	35	35	3.3	--	--	--	87	20	4.7
TOTAL	1514	--	174.7	5968	--	67391.0	4974	--	9034.5

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	86	23	5.3	482	1620	2110	413	575	641
2	86	38	8.8	712	3630	7360	375	540	547
3	82	43	9.5	523	1750	2470	327	490	433
4	82	26	5.8	445	970	1170	306	610	504
5	81	17	3.7	486	1950	2560	304	465	382
6	79	20	4.3	1390	11900	48400	350	505	477
7	77	20	4.2	2320	9900	62000	299	470	379
8	72	15	2.9	1600	5350	24400	270	420	306
9	68	40	7.3	1050	2210	6270	245	380	251
10	63	68	12	840	1310	2970	215	345	200
11	58	31	4.9	690	980	1830	207	290	162
12	58	47	7.4	616	920	1530	188	350	178
13	56	34	5.1	794	1990	4270	194	540	283
14	55	43	6.4	1010	2520	6870	337	1300	1180
15	53	28	4.0	695	1070	2010	658	2760	4900
16	63	33	5.6	586	670	1060	399	1280	1380
17	100	43	12	526	590	838	350	700	662
18	102	56	15	475	440	564	645	3450	6010
19	79	113	24	427	420	484	465	5300	6650
20	74	134	27	386	400	417	528	3900	5560
21	160	1550	670	356	420	404	259	1020	713
22	273	1980	1460	341	370	341	214	450	260
23	201	1050	570	402	740	803	183	460	227
24	146	250	99	546	860	1270	165	350	156
25	125	120	41	540	950	1390	150	290	117
26	116	240	75	424	1200	1370	148	280	112
27	135	340	124	1390	17000	72700	142	300	115
28	633	3140	9610	800	6200	13400	178	320	154
29	1120	6970	22400	650	3900	6840	221	510	304
30	543	2810	4120	564	2400	3650	212	1390	796
31	--	--	--	450	1080	1310	--	--	--
TOTAL	4926	--	39344.2	22516	--	283061	8947	--	34039

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	172	770	358	150	200	81	121	70	23
2	165	880	392	617	1650	9390	124	97	32
3	173	800	374	1380	4950	23200	127	44	15
4	138	210	78	401	1300	1410	123	27	9.0
5	128	145	50	257	620	430	117	35	11
6	133	245	88	220	450	267	114	25	7.7
7	149	272	109	1370	3320	13500	108	17	5.0
8	151	225	92	452	1440	1760	104	25	7.0
9	126	133	45	346	1020	953	101	29	7.9
10	116	140	44	252	480	327	108	98	29
11	145	330	129	231	275	172	8590	8590	252000
12	204	570	314	241	245	159	17900	4710	226000
13	222	640	384	209	275	155	29800	2770	223000
14	505	2020	3240	199	234	126	17200	3790	135000
15	398	1830	1970	216	149	87	2850	3280	25200
16	286	1820	1410	172	92	43	1940	1810	9480
17	224	760	460	162	50	22	1540	1220	5070
18	393	1750	1860	151	33	13	1250	920	3110
19	314	1290	1090	148	43	17	1080	790	2300
20	216	408	238	136	72	26	948	530	1360
21	184	303	151	144	52	20	850	480	1100
22	152	242	99	151	49	20	766	390	807
23	135	185	67	151	34	14	712	350	673
24	126	110	37	149	42	17	694	360	675
25	213	470	270	163	123	54	692	320	598
26	827	5040	13800	174	88	41	779	710	1490
27	1210	4310	15400	170	81	37	1060	1000	2860
28	375	1820	1840	143	44	17	777	700	1470
29	224	400	242	130	38	13	793	520	1110
30	190	320	164	109	34	10	852	620	1430
31	162	270	118	105	33	9.4	—	—	--
TOTAL	8156	—	44913	8899	--	52390.4	92220	—	894879.6

TOTAL DISCHARGE FOR YEAR (CFS-DAYS) 164742
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS) 1431582.78

06809500 EAST NISHNABOTNA RIVER AT RED OAK, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMP-ERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM
FEB.							
28...	3.0	1340	6260	22600	25	30	41
29...	2.0	2200	7870	46700	32	38	47
MAR.							
08...	2.0	303	1440	1180	57	62	77
APR.							
29...	16.0	1180	7130	22700	36	41	52
MAY							
07...	11.0	2790	9610	72400	22	27	35
27...	20.0	1800	19900	96700	35	48	62
JUNE							
18...	23.0	1100	6540	19400	42	51	63
JULY							
19...	22.0	297	1510	1210	67	76	79
27...	24.0	1060	3300	9450	48	56	66
AUG.							
07...	21.0	1920	4460	23100	54	59	72
SEP.							
11...	20.0	5280	11200	160000	26	29	37
11...	20.0	14700	8140	323000	33	39	47
13...	21.0	27800	2870	215000	46	56	66
13...	22.0	30700	3400	282000	43	49	57
13...	21.5	34000	2920	268000	41	47	56

DATE	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM	SUS. SED. FALL DIAM. % FINER THAN .500 MM
FEB.						
28...	51	73	94	96	99	100
29...	61	84	98	99	100	--
MAR.						
08...	87	96	100	--	--	--
APR.						
29...	70	90	99	100	--	--
MAY						
07...	48	73	93	95	98	100
27...	75	93	98	99	100	--
JUNE						
18...	76	91	99	100	--	--
JULY						
19...	90	93	100	--	--	--
27...	82	85	98	--	--	--
AUG.						
07...	82	85	98	98	100	--
SEP.						
11...	48	78	91	95	100	--
11...	57	81	97	99	100	--
13...	80	90	98	98	99	100
13...	68	86	96	97	100	--
13...	69	85	98	98	100	--

06818750 PLATTE RIVER NEAR DIAGONAL, IOWA

LOCATION.--Lat 40°46'02", long 94°24'46", in NE1/4 NW1/4 sec.22, T.69 N., R.31 W., Ringgold County, at downstream side of bridge on county highway, at gaging station, 2.2 miles upstream from Turkey Creek, 4.6 miles southwest of Diagonal, and 4.9 miles downstream from Gard Creek.
DRAINAGE AREA.--217 sq mi.
PERIOD OF RECORD.--Chemical analyses: February 1969 to current year.
Water temperatures: February 1969 to current year (partial-record station).
Sediment concentrations: May 1968 to current year (partial-record station).
REMARKS.--Samples for chemical analysis are collected periodically.
COOPERATION.--Laboratory analysis of chemical constituents furnished by State Hygienic Laboratory, Des Moines, Iowa.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	IRON (FE) (UG/L)	PHOS-PHATE (PO4) (MG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
MAY										
09...	220	14	2.1	120	.40	230	42	12	7.4	5.0

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS_SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
MAY										
09...	105	0	86	51	10	.4	19	810	1.10	481

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
MAY									
09...	160	74	9	.3	380	7.4	13.0	48	<.10

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-06-71	1200	2.3	520.		
12-14-71	1430	30.	390.	0.0	8.1
02-08-72	1450	2.6	750.	0.0	7.5
03-15-72	1440	21.	440.	10.5	7.9
04-19-72	0800	8.0	580.	12.5	8.1
06-01-72	1200	31.	320.	23.0	8.0
09-12-72	1800	4710.	100.	21.5	7.8

DATE	TEMP-ERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
OCT., 1971				
06...	--	2.3	2	.01
FEB., 1972				
08...	.0	2.6	17	.12
MAR.				
15...	10.5	21	126	7.1
APR.				
19...	12.5	8.0	19	.41
JUNE				
01...	23.0	31	119	10
SEP.				
12...	21.5	4710	1110	14100
13...	22.5	5820	686	10800
14...	22.0	2010	1130	6130

06897950 ELK CREEK NEAR DECATUR CITY, IOWA
(Hydrologic bench-mark station)

LOCATION.--Lat 40°43'18", long 93°56'19", near the southeast corner sec.34, T.69 N., R.27 W., Decatur County, at gaging station, 700 ft downstream from West Elk Creek, 5.2 miles upstream from mouth, and 5.7 miles southwest of Decatur City.

DRAINAGE AREA.--52.5 sq mi.

PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.
Water temperatures: November 1967 to current year (partial-record station).
Sediment records: November 1967 to current year (partial-record station).

REMARKS.--Miscellaneous biological data collected September 1970 to September 1972.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	DIS-SOLVED MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)
NOV.											
11...	.31	11	520	930	69	17	8.6	5.8	256	0	210
DEC.											
15...	74	10	60	38	30	8.4	5.6	5.9	90	0	74
FEB.											
09...	.11	--	--	--	--	--	--	--	--	--	--
09...	.11	14	110	4800	130	21	14	3.0	445	0	365
MAR.											
16...	10	7.3	190	140	73	18	12	4.0	222	0	182
APR.											
06...	2.6	3.7	60	360	76	21	12	4.4	250	0	205
06...	2.6	--	--	--	--	--	--	--	--	--	--
MAY											
09...	75	14	70	70	57	16	7.9	5.0	192	0	157
09...	75	--	--	--	--	--	--	--	--	--	--
09...	75	--	--	--	--	--	--	--	--	--	--
24...	23	--	--	--	--	--	--	--	--	--	--
JUNE											
01...	3.8	11	80	150	82	20	11	5.4	286	0	235
01...	3.8	--	--	--	--	--	--	--	--	--	--
JULY											
13...	.52	7.3	900	60	78	22	12	4.7	282	0	231
13...	.52	--	--	--	--	--	--	--	--	--	--
AUG.											
14...	.48	--	--	--	--	--	--	--	--	--	--
30...	.08	11	30	550	88	16	12	5.2	300	0	246
30...	.08	--	--	--	--	--	--	--	--	--	--
SEP.											
13...	79	--	--	--	--	--	--	--	--	--	--

DATE	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS_ SOLVED NITRATE (NO3) (MG/L)	TOTAL PHOS-PHORUS (P) (MG/L)	TOTAL PHOS-PHORUS (PO4) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)	HARD-NESS (CA,MG) (MG/L)
NOV.											
11...	48	7.0	.2	.5	.020	.05	304	295	.41	.25	240
DEC.											
15...	36	6.0	.3	9.6	.72	2.2	166	158	.23	--	110
FEB.											
09...	--	--	--	--	--	--	--	--	--	--	--
09...	76	12	.2	1.1	.030	.11	490	495	.67	.15	410
MAR.											
16...	84	9.0	.3	.7	.030	.09	336	318	.46	9.07	260
APR.											
06...	89	7.0	.3	.0	.23	.72	356	338	.48	2.50	280
06...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	57	5.0	.3	5.9	.32	1.0	280	263	.38	56.7	210
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
JUNE											
01...	67	7.0	.3	.1	.090	.27	356	345	.48	3.65	290
01...	--	--	--	--	--	--	--	--	--	--	--
JULY											
13...	66	16	.3	.0	.030	.09	339	346	.46	.48	280
13...	--	--	--	--	--	--	--	--	--	--	--
AUG.											
14...	--	--	--	--	--	--	--	--	--	--	--
30...	52	7.5	.3	1.7	.050	.16	352	342	.48	72.2	290
30...	--	--	--	--	--	--	--	--	--	--	--

06897950 ELK CREEK NEAR DECATUR CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	NON-CARBONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	COLOR (PLATINUM-COBALT UNITS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	DISSOLVED OXYGEN (MG/L)	PERCENT SATURATION	BIOCHEMICAL OXYGEN DEMAND (MG/L)	IMMEDIATE COLIFORM (COL. PER 100 ML)
NOV.											
11...	32	7	.2	3	490	8.2	4.0	9.8	76	2.2	--
DEC.											
15...	36	9	.2	300	440	8.2	1.0	--	--	5.8	--
FEB.											
09...	--	--	--	--	850	7.6	.0	11.6	82	4.6	100
09...	46	7	.3	8	--	--	--	--	--	--	--
MAR.											
16...	74	9	.3	10	580	7.8	--	--	--	2.0	460
APR.											
06...	71	8	.3	7	--	--	--	--	--	--	--
06...	--	--	--	--	455	8.3	12.5	11.4	110	3.4	69
MAY											
09...	50	7	.2	22	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	450	8.1	12.0	10.6	100	2.6	4600
24...	--	--	--	--	320	8.2	16.0	9.6	96	5.8	--
JUNE											
01...	52	8	.3	8	--	--	--	--	--	--	--
01...	--	--	--	--	600	8.0	20.0	--	--	3.8	1100
JULY											
13...	54	8	.3	15	--	--	25.5	--	--	--	--
13...	--	--	--	--	420	8.2	25.5	7.8	96	<4.0	1600
AUG.											
14...	--	--	--	--	570	7.8	30.5	10.6	140	.8	80
30...	40	8	.3	5	--	--	--	--	--	--	--
30...	--	--	--	--	620	8.2	21.5	--	--	<2.6	--
SEP.											
13...	--	--	--	--	260	8.5	22.5	--	--	--	--

DATE	ALDRIN (UG/L)	ALDRIN IN BOTTOM DEPOSITS (UG/KG)	CHLORDANE (UG/L)	CHLORDANE IN BOTTOM DEPOSITS (UG/KG)	DDD (UG/L)	DDD IN BOTTOM DEPOSITS (UG/KG)	DDE (UG/L)	DDE IN BOTTOM DEPOSITS (UG/KG)	DDT (UG/L)	DDT IN BOTTOM DEPOSITS (UG/KG)
NOV.										
11...	.00	<.2	.0	<1.0	.00	<.2	.00	<.2	.00	<.2

DATE	DIAZINON (UG/L)	DIELDRIN (UG/L)	DIELDRIN IN BOTTOM DEPOSITS (UG/KG)	ENDRIN (UG/L)	ENDRIN IN BOTTOM DEPOSITS (UG/KG)	HEPTACHLOR (UG/L)	HEPTACHLOR IN BOTTOM DEPOSITS (UG/KG)	HEPTACHLOR EPOXIDE (UG/L)	HEPTACHLOR EPOXIDE IN BOTTOM DEPOSITS (UG/KG)	LINDANE (UG/L)
NOV.										
11...	.00	.00	<.2	.00	<.2	.00	<.2	.00	<.2	.00

DATE	LINDANE IN BOTTOM DEPOSITS (UG/KG)	MALATHION (UG/L)	MALATHION IN BOTTOM DEPOSITS (UG/KG)	METHYL PARATHION (UG/L)	METHYL PARATHION IN BOTTOM DEPOSITS (UG/KG)	PARATHION (UG/L)	PARATHION IN BOTTOM DEPOSITS (UG/KG)	2,4-D (UG/L)	2,4,5-T (UG/L)	SILVEX (UG/L)
NOV.										
11...	<.2	.00	<.2	.00	<.2	.00	<.2	.00	.00	.00

06897950 ELK CREEK NEAR DECATUR CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

ANALYSES OF MISCELLANEOUS STATIONS

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
06897950 - ELK CREEK NEAR DECATUR CITY, IOWA (LAT 40 43 18 LONG 093 56 19)				
FEB., 1972				
09...	.0	.11	109	.03
MAR.				
16...	5.0	10	17	.46
MAY				
09...	12.0	75	365	74
JULY				
13...	25.5	.52	78	.11
SEP.				
13...	22.5	79	408	87

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA

LOCATION.--Lat 40°38'25", long 93°48'29", in SE1/4 SE1/4 sec.35, T.68 N., R.26 W., Decatur County, 40 ft upstream from gaging station, on upstream side of bridge on U.S. Highway 69 at Davis City, 2.6 miles upstream from Dickersons Branch, and 5.2 miles upstream from Iowa-Missouri State line.

DRAINAGE AREA.--701 sq mi.

PERIOD OF RECORD.--Chemical analysis: October 1967 to current year.
Water temperatures: April 1968 tc current year.
Sediment records: April 1968 to current year.

EXTREMES.--Current year: Specific conductance: Maximum daily, 580 micromhos Feb. 11; minimum daily, 150 micromhos Sept. 16.
Water temperatures: Maximum, 33.0°C Aug. 13, 14; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 7,180 mg/l Sept. 12; minimum daily, 17 mg/l Dec. 5.
Sediment discharge: Maximum daily, 89,300 tons Sept. 12; minimum daily, 0.45 ton Oct. 12.

Period of record: Specific conductance: Maximum daily, 750 micromhos Nov. 14, 15, 1968; minimum daily, 150 micromhos Sept. 16, 1970, Feb. 20, 22, 1971, Sept. 16, 1972.
Water temperatures: Maximum, 33.0°C Aug. 13, 14, 1972; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 27,000 mg/l Feb. 26, 1969; minimum daily, 5 mg/l Feb. 4, 1969.
Sediment discharge: Maximum daily, 234,000 tons July 19, 1969; minimum daily, 0.24 ton Dec. 4, 1968.

REMARKS.--Samples for chemical analyses are collected periodically. Flow affected by ice Dec. 27 to Mar. 8.

COOPERATION.--Laboratory analysis of chemical constituents furnished by State Hygienic Lab., Des Moines, Iowa.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1970 TO SPETEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	420	260	440	420	530	330	400	340	420	430	315	430
2	420	210	---	440	500	300	400	400	---	470	---	---
3	450	260	420	410	570	300	400	420	420	470	315	---
4	450	250	450	410	470	350	400	470	440	---	310	460
5	450	270	460	430	500	380	400	490	410	---	320	460
6	380	280	450	450	530	380	400	---	430	---	320	460
7	370	290	---	430	550	400	400	220	400	470	300	450
8	370	350	500	430	500	400	400	280	400	480	300	470
9	370	350	490	420	450	440	410	320	400	440	290	450
10	360	350	440	430	440	440	410	380	450	---	290	440
11	370	400	430	420	580	430	410	430	---	---	320	430
12	350	410	410	410	550	430	410	470	420	---	330	275
13	370	400	410	420	510	435	410	300	420	---	350	225
14	350	420	420	420	480	480	410	330	400	---	400	270
15	---	450	275	450	460	435	420	360	---	---	420	210
16	350	460	280	420	510	460	420	420	---	---	420	150
17	340	450	530	420	430	440	420	450	---	---	420	210
18	360	420	490	420	410	460	460	480	320	---	450	300
19	360	460	470	450	365	400	460	490	320	---	---	280
20	360	470	500	400	350	420	480	490	370	---	400	310
21	420	480	430	410	330	380	330	---	380	---	390	---
22	460	480	440	410	350	410	300	490	450	320	390	340
23	440	500	440	410	325	400	400	480	430	320	390	340
24	400	500	450	410	370	410	450	450	450	330	390	360
25	400	450	430	420	370	400	490	480	400	---	400	380
26	430	470	430	440	360	410	500	480	470	---	400	380
27	430	440	430	440	360	410	500	420	470	---	---	380
28	440	410	470	450	350	400	500	410	450	---	390	390
29	430	460	470	470	350	410	490	360	430	300	370	390
30	370	470	430	490	---	410	---	360	430	310	450	390
31	380	---	430	490	---	420	---	360	---	310	450	---
MONTH	395	396	438	430	443	405	423	408	415	---	368	357
YEAR	407											

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	12.0	4.5	4.5	0.0	1.0	4.5	10.0	19.5	28.0	23.5	22.0
2	23.5	10.0	---	4.5	0.0	6.0	4.5	15.5	---	28.0	---	---
3	21.0	9.0	4.5	0.5	0.0	2.0	4.5	15.5	24.5	26.5	22.0	---
4	20.0	10.0	5.0	0.0	0.0	0.0	12.0	18.0	25.5	---	27.0	26.5
5	21.0	10.5	4.5	0.0	0.0	3.0	13.0	20.0	26.5	---	26.0	29.5
6	21.0	5.5	4.5	2.0	0.0	3.0	7.0	---	28.5	---	24.5	29.5
7	20.0	5.5	---	1.0	0.0	10.0	4.5	15.5	26.5	26.5	24.0	24.5
8	18.5	6.5	7.0	2.0	0.0	4.5	8.0	15.0	26.5	26.0	23.5	25.5
9	15.5	6.0	4.5	4.5	0.0	10.0	10.0	13.5	29.0	26.5	23.5	24.0
10	15.5	6.0	4.5	2.0	0.0	14.5	14.5	6.0	20.0	---	26.0	21.5
11	15.5	5.0	4.5	2.0	0.0	4.5	14.5	13.0	---	---	26.5	27.0
12	18.5	8.0	4.5	2.0	0.0	4.5	14.5	18.0	23.5	---	29.5	21.5
13	14.5	12.0	3.5	0.0	0.0	9.5	18.5	17.0	26.0	---	33.0	23.5
14	16.0	12.0	4.5	0.0	2.0	9.5	18.5	15.5	25.0	---	33.0	21.5
15	---	13.5	3.0	0.5	3.5	8.5	15.5	18.0	---	---	29.5	24.0
16	15.5	11.0	4.5	0.5	0.0	9.5	12.0	22.0	24.5	---	29.5	13.0
17	21.0	15.5	4.5	1.0	1.0	9.0	15.5	24.0	25.5	---	29.5	24.0
18	21.0	10.0	4.5	3.5	0.0	9.0	23.5	24.0	23.5	---	29.5	25.5
19	20.0	15.5	4.5	1.0	---	9.0	16.0	25.5	23.5	---	---	24.0
20	18.5	8.0	3.5	1.0	0.0	15.5	12.0	21.0	21.5	---	29.0	25.5
21	18.5	15.5	4.5	0.0	0.0	10.0	11.0	---	20.0	---	26.5	---
22	18.5	15.5	3.5	0.5	0.0	11.0	11.0	25.5	22.0	31.5	29.5	20.0
23	17.0	5.0	4.5	0.0	2.0	11.0	12.0	25.0	21.0	31.5	25.0	18.0
24	15.5	6.5	4.5	0.0	2.0	11.0	12.0	21.0	23.5	31.5	25.0	18.5
25	16.5	7.0	4.5	0.0	2.0	10.0	10.0	23.5	21.0	---	26.5	20.0
26	18.5	7.0	4.5	0.0	0.0	10.0	15.0	25.5	24.5	24.5	23.5	20.0
27	17.0	5.5	4.0	0.0	2.0	9.0	14.0	22.0	24.5	24.5	---	19.0
28	17.0	4.5	2.0	0.0	3.5	6.5	18.5	22.0	25.5	---	29.5	20.0
29	15.5	4.5	2.0	0.0	0.0	9.5	18.5	22.0	28.0	26.0	29.5	18.5
30	15.5	4.5	1.0	0.0	---	6.0	---	20.0	28.0	24.5	25.5	15.5
31	14.5	---	4.5	0.0	---	6.0	---	18.5	---	24.5	24.5	---
MONTH	18.5	9.0	4.0	1.0	0.5	8.0	12.5	19.0	24.5	---	27.0	22.5
YEAR	13.5											

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	IRON (FE) (UG/L)	PHOS-PHATE (PO4) (MG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
MAY 09...	1840	11	4.5	190	.25	40	42	9.4	7.0	5.6

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS-SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
MAY 09...	124	0	102	40	4.5	.2	14	2060	2.80	10200

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
MAY 09...	152	50	9	.3	310	7.4	11.0	102	<.10

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	3.8	62	.64	371	1130	2990	47	19	2.4
2	4.5	59	.72	1840	4670	23200	44	23	2.7
3	3.7	52	.52	948	1670	4270	41	28	3.1
4	4.3	49	.57	271	1130	827	40	20	2.2
5	3.6	53	.52	124	620	208	41	17	1.9
6	3.1	57	.48	77	336	70	45	32	3.9
7	2.9	65	.51	55	206	31	51	40	5.5
8	3.0	87	.70	43	166	19	62	45	7.5
9	3.5	111	1.0	36	133	13	67	31	5.6
10	3.3	98	.87	33	87	7.8	127	490	168
11	2.5	88	.59	30	66	5.3	272	522	383
12	2.5	67	.45	29	63	4.9	223	430	259
13	2.6	78	.55	28	68	5.1	99	256	68
14	2.9	83	.65	28	66	5.0	77	208	43
15	3.1	87	.73	26	61	4.3	467	1030	1300
16	3.3	91	.81	26	63	4.4	262	341	241
17	3.4	79	.73	27	100	7.3	106	147	42
18	3.4	88	.81	51	172	24	71	103	20
19	5.2	92	1.3	39	84	8.8	87	175	41
20	7.8	96	2.0	44	59	7.0	82	52	12
21	21	99	5.6	39	38	4.0	68	55	10
22	18	73	3.5	33	31	2.8	56	49	7.4
23	12	62	2.0	38	31	3.2	59	49	7.8
24	6.3	72	1.2	32	24	2.1	59	46	7.3
25	9.6	76	2.0	28	33	2.5	60	47	7.6
26	6.9	55	1.0	28	35	2.6	62	55	9.2
27	6.8	43	.79	29	27	2.1	52	34	4.8
28	5.3	57	.82	31	29	2.4	45	135	16
29	13	94	3.3	44	30	3.6	38	100	10
30	58	216	34	48	22	2.9	44	60	7.1
31	77	203	42	--	--	--	50	71	9.6
TOTAL	306.3	--	111.36	4476	--	31740.1	2904	--	2708.6

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	45	62	7.5	12	151	4.9	120	133	43
2	35	82	7.7	12	128	4.1	86	90	21
3	24	102	6.6	11	84	2.5	110	73	22
4	32	57	4.9	11	100	3.0	100	51	14
5	40	100	11	10	127	3.4	90	44	11
6	38	108	11	10	100	2.7	76	50	10
7	28	107	8.1	10	92	2.5	70	53	10
8	23	117	7.3	10	111	3.0	64	57	9.8
9	26	103	7.2	9.0	134	3.3	55	36	5.3
10	30	86	7.0	9.6	143	3.7	51	21	2.9
11	35	91	8.6	10	110	3.0	54	23	3.4
12	40	91	9.8	11	90	2.7	63	31	5.3
13	38	94	9.6	13	66	2.3	123	140	46
14	30	107	8.7	18	98	4.8	133	134	48
15	20	122	6.6	40	439	47	109	113	33
16	24	124	8.0	56	722	109	103	60	17
17	27	87	6.3	70	548	104	97	55	14
18	30	85	6.9	90	328	80	88	46	11
19	28	81	6.1	140	124	47	77	69	14
20	27	74	5.4	150	166	67	72	43	8.4
21	26	82	5.8	150	118	48	67	55	9.9
22	24	73	4.7	130	95	33	63	53	9.0
23	21	59	3.3	110	102	30	58	27	4.2
24	18	61	3.0	130	187	66	53	38	5.4
25	16	72	3.1	120	145	47	50	37	5.0
26	14	102	3.9	100	112	30	46	48	6.0
27	12	92	3.0	80	77	17	47	57	7.2
28	10	86	2.3	76	78	16	48	38	4.9
29	10	99	2.7	100	92	25	50	45	6.1
30	10	126	3.4	--	--	--	49	43	5.7
31	11	122	3.6	--	--	--	47	53	6.7
TOTAL	792	--	193.1	1698.6	--	811.9	2319	--	419.2

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	46	33	4.1	763	3320	6840	178	317	152
2	43	34	3.9	446	1510	1820	143	190	73
3	43	43	5.0	232	470	294	116	128	40
4	41	50	5.5	160	170	73	98	150	40
5	41	42	4.6	129	90	31	89	138	33
6	40	55	5.9	812	568	3640	83	124	28
7	39	56	5.9	6260	4950	86200	81	147	32
8	36	54	5.2	4960	2450	32800	75	128	26
9	33	68	6.1	2150	1980	11500	71	128	25
10	31	76	6.4	1070	1370	3960	65	89	16
11	30	72	5.8	639	700	1210	58	108	17
12	31	64	5.4	458	500	618	61	144	24
13	40	57	6.2	1520	2540	10800	105	163	46
14	35	64	6.0	1670	2560	11500	80	211	46
15	33	81	7.2	1000	1020	2750	84	410	93
16	34	87	8.0	590	510	812	803	3000	6650
17	37	82	8.2	395	378	403	834	3310	8260
18	46	72	8.9	299	215	174	548	1290	2180
19	50	87	12	239	133	86	274	820	607
20	72	82	16	201	98	53	176	400	190
21	923	3390	10700	175	103	49	126	249	85
22	1240	3640	13100	155	71	30	97	98	26
23	426	1200	1380	144	44	17	107	74	21
24	226	360	220	153	44	18	85	88	20
25	151	152	62	163	53	23	72	84	16
26	112	76	23	194	132	69	68	93	17
27	98	152	40	166	1100	493	62	63	11
28	109	123	36	290	1390	1090	58	56	8.8
29	124	98	33	287	1800	1390	54	50	7.3
30	236	1010	1050	366	1790	1770	50	52	7.0
31	--	--	--	203	820	449	--	--	--
TOTAL	4446	--	26780.3	26289	--	180962	4801	--	18797.1

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	48	47	6.1	123	63	21	63	840	143
2	46	67	8.3	108	115	34	34	442	41
3	39	71	7.5	99	313	84	25	121	8.2
4	34	65	6.0	98	102	27	21	97	5.5
5	31	70	5.9	94	113	29	19	98	5.0
6	31	82	6.9	95	240	62	17	111	5.1
7	29	93	7.3	97	433	113	17	99	4.5
8	28	82	6.2	297	461	370	16	91	3.9
9	27	72	5.2	143	392	151	15	104	4.2
10	27	72	5.2	119	84	27	15	106	4.3
11	26	72	5.1	104	95	27	116	73	23
12	26	71	5.0	92	92	23	4720	7180	89300
13	26	69	4.8	83	52	12	5260	3000	42600
14	26	67	4.7	75	49	9.9	5270	1600	22800
15	29	65	5.1	69	44	8.2	7760	1530	32100
16	29	68	5.3	64	48	8.3	10200	2220	61100
17	40	82	8.9	58	43	6.7	6640	2030	36400
18	91	207	51	52	53	7.4	1020	1390	3830
19	805	1440	3130	47	69	8.8	1860	2670	13400
20	987	2100	5600	43	94	11	1600	1680	7260
21	408	790	870	40	85	9.2	543	1130	1660
22	184	197	98	36	82	8.0	394	690	734
23	127	101	35	33	83	7.4	329	311	276
24	98	98	26	30	82	6.6	279	228	172
25	78	98	21	30	78	6.3	249	182	122
26	878	3550	12700	30	76	6.2	227	182	112
27	530	2100	3010	29	72	5.6	202	123	67
28	611	2520	4160	29	65	5.1	209	104	59
29	306	1060	876	28	58	4.4	217	81	47
30	166	285	128	27	53	3.9	177	93	44
31	143	66	25	27	85	6.2	--	--	--
TOTAL	5954	--	30833.5	2299	--	1109.2	47514	--	312330.7

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	103798.9
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	606797.06

06898000 THOMPSON RIVER AT DAVIS CITY, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM	SUS. SED. FALL DIAM. % FINER THAN .125 MM	SUS. SED. FALL DIAM. % FINER THAN .250 MM
JUNE												
16...	25.5	894	3370	8130	58	69	82	92	97	99	--	--
17...	24.0	1280	3480	12000	56	67	77	88	94	99	--	--
JULY												
26...	24.5	1730	6990	32700	31	37	45	59	66	96	100	--
27...	24.5	574	2230	3460	54	63	76	86	94	99	--	--
SEP.												
12...	21.[illegible]	4520	13300	162000	19	22	24	35	55	79	95	100
17...	21.5	7870	4550	96700	32	36	40	45	65	77	87	100

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	[illegible]	3.0	[illegible]	1[illegible].0	***
11-10-71	1120	32.	[illegible]	****	7.[illegible]
12-15-71	1135	[illegible]	*****	1.0	***
02-03-72	11[illegible]	10.	*****	3.0	***
03-15-72	1030	114.	540.	7.[illegible]	[illegible].1
04-19-72	1135	46.	550.	1[illegible]	[illegible]
06-01-72	0910	143.	*****	20.5	***
07-12-72	1300	25.	340.	24.5	7.[illegible]
08-30-72	1435	25.	*****	1[illegible].0	***
09-13-72	1355	[illegible]713.	130.	25.0	***

06898400 WELDON RIVER NEAR LEON, IOWA

LOCATION.--Lat 40°41'45", long 93°38'07", in NE1/4 NE1/4 sec.17, T.68 N., R.24 W., Decatur County, at downstream side of bridge on county highway A, 10 ft upstream from gaging station, 200 ft upstream from unnamed creek, 1.3 miles downstream from Brush Creek, and 6.5 miles southeast of Post Office in Leon.
DRAINAGE AREA.--104 sq mi.
PERIOD OF RECORD.--Chemical analyses: February 1968 to current year.
REMARKS.--Samples for chemical analysis are collected periodically.
COOPERATION.--Laboratory analysis of chemical constituents furnished by State Hygienic Laboratory, Des Moines, Iowa.

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	DIS-CHARGE (CFS)	DIS-SOLVED SILICA (SIO2) (MG/L)	ORGANIC NITRO-GEN (N) (MG/L)	IRON (FE) (UG/L)	PHOS-PHATE (PO4) (MG/L)	TOTAL MAN-GANESE (MN) (UG/L)	DIS-SOLVED CAL-CIUM (CA) (MG/L)	DIS-SOLVED MAG-NE-SIUM (MG) (MG/L)	DIS-SOLVED SODIUM (NA) (MG/L)	DIS-SOLVED PO-TAS-SIUM (K) (MG/L)
MAY										
09...	190	13	1.7	160	.04	50	50	11	9.3	5.6

DATE	BICAR-BONATE (HCO3) (MG/L)	CAR-BONATE (CO3) (MG/L)	ALKA-LINITY AS CACO3 (MG/L)	DIS-SOLVED SULFATE (SO4) (MG/L)	DIS-SOLVED CHLO-RIDE (CL) (MG/L)	DIS-SOLVED FLUO-RIDE (F) (MG/L)	DIS_ SOLVED NITRATE (NO3) (MG/L)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	DIS-SOLVED SOLIDS (TONS PER AC-FT)	DIS-SOLVED SOLIDS (TONS PER DAY)
MAY										
09...	148	0	121	52	6.0	.2	16	604	.82	310

DATE	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)	CHEM-ICAL OXYGEN DEMAND (LOW LEVEL) (MG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
MAY									
09...	180	59	10	.3	390	7.4	15.0	37	<.10

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1400	0.12	490.	22.0	8.4
11-10-71	0800	1.8	340.	2.0	7.9
12-15-71	0900	973.	180.	1.0	7.7
02-08-72	0900	1.0	725.	0.0	7.7
03-15-72	0800	35.	470.	7.0	8.0
04-19-72	1400	13.	500.	14.0	8.1
05-31-72	1500	9.5	520.		8.0
07-12-72	1130	2.8	420.	24.0	8.3

06903400 CHARITON RIVER NEAR CHARITON, IOWA

LOCATION.--Lat 40°57'12", long 93°15'37", in SW1/4 NE1/4 sec.15, T.71 N., R.21 W., Lucas County, near center of span on downstream side of bridge on county highway S43, 15 ft upstream from gaging station, 0.4 mile downstream from Wolf Creek and 5.0 miles southeast of Chariton.

DRAINAGE AREA.--182 sq mi.

PERIOD OF RECORD.--Specific conductance: October 1969 to current year.
Water temperatures: October 1969 to current year.
Sediment records: October 1969 to current year.

EXTREMES.--Current year: Specific conductance: Maximum daily, 810 micromhos Feb. 8-10; minimum daily, 115 micromhos Sept. 14.
Water temperatures: Maximum, 25.0°C Aug. 16; freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 2,260 mg/l May 1; minimum daily, 12 mg/l Jan. 30, 31.
Sediment discharge: Maximum daily, 2,060 tons May 8; minimum daily, 0.06 ton Jan. 30, 31.

Period of record: Specific conductance: Maximum daily, 810 micromhos Feb. 8-10, 1972; minimum daily, 110 micromhos Feb. 27, 1971.
Water temperatures: Maximum, 27.0°C June 9, 1970; freezing point on many days during winter months each year.
Sediment concentrations: Maximum daily, 3,780 mg/l May 19, 1971; minimum daily, 3 mg/l Dec. 17, 1969.
Sediment discharge: Maximum daily, 21,600 tons Aug. 8, 1970; minimum daily, 0.06 ton July 14, 1970, Jan. 30, 31, 1972.

REMARKS.--Flow affected by ice Jan. 3-7, Jan. 13 to Mar. 8.

SPECIFIC CONDUCTANCE (MICROMHOS AT 25°C), WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	550	460	580	770	350	600	300	420	485	270	480
2	410	210	480	---	740	380	---	400	450	---	290	490
3	---	230	500	530	740	380	600	450	480	490	330	---
4	450	200	500	530	750	385	600	430	---	500	360	330
5	460	190	---	530	750	---	570	420	500	505	310	300
6	470	220	470	570	---	390	580	450	380	505	170	240
7	480	---	470	580	770	390	590	365	---	510	180	250
8	500	230	500	590	810	400	590	270	380	510	180	290
9	500	255	500	---	810	450	---	245	460	---	230	290
10	---	270	500	590	810	420	590	255	380	540	260	---
11	510	300	400	600	800	420	580	310	---	560	290	320
12	510	300	---	600	800	---	580	360	330	560	310	195
13	510	330	450	600	---	500	600	430	330	580	---	120
14	510	---	435	590	790	480	590	---	380	580	360	115
15	540	370	285	620	700	420	590	310	---	580	340	120
16	550	370	220	---	650	440	---	350	380	---	340	155
17	---	380	220	590	380	440	570	400	390	560	380	---
18	570	380	220	490	260	480	600	420	---	550	390	240
19	570	390	---	600	320	---	520	450	400	590	400	270
20	590	400	300	610	---	480	530	480	420	400	---	290
21	580	---	340	620	250	500	370	---	420	300	420	300
22	580	460	380	630	250	520	320	490	420	200	430	330
23	590	350	380	---	280	520	---	500	450	---	430	350
24	---	360	390	630	280	520	330	500	440	270	460	---
25	640	380	440	700	290	520	390	510	---	290	410	350
26	610	410	---	700	320	---	420	510	470	240	310	380
27	600	400	470	730	---	520	450	500	470	220	---	400
28	600	---	500	750	360	550	480	---	470	250	420	410
29	600	450	480	790	360	560	500	400	470	250	480	460
30	590	450	480	---	---	580	---	400	480	---	490	480
31	---	---	400	780	---	580	---	315	---	280	490	---
MONTH	535	340	414	620	562	466	526	401	424	435	348	306
YEAR	446											

06903400 CHARITON RIVER NEAR CHARITON, IOWA--CONTINUED

TEMPERATURE (°C) OF WATER, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	8.0	1.0	0.0	0.0	0.0	2.0	14.0	15.0	22.0	22.0	20.0
2	20.0	9.0	1.0	—	0.0	0.0	—	12.0	18.5	—	21.5	18.0
3	—	8.0	1.0	0.0	0.0	0.0	6.0	11.0	21.0	19.0	21.5	—
4	15.0	7.0	1.0	0.0	0.0	0.0	2.0	12.0	—	18.5	19.0	16.5
5	14.0	8.0	—	0.0	0.0	—	6.0	13.5	22.0	18.0	19.0	18.0
6	13.0	5.0	3.0	0.0	—	0.0	9.0	15.0	22.0	16.5	19.5	18.0
7	12.0	—	4.0	0.0	0.0	0.0	11.5	11.0	21.5	18.0	18.5	20.5
8	12.0	2.0	4.0	0.0	0.0	0.0	11.0	9.5	21.5	19.0	19.5	20.0
9	12.0	3.0	3.0	—	0.0	0.0	—	10.5	23.0	—	18.5	18.5
10	—	3.0	2.0	0.0	0.0	0.0	9.0	13.0	20.5	23.0	18.0	—
11	10.0	3.0	2.0	0.0	0.0	4.0	5.0	14.5	—	23.0	20.5	19.5
12	9.0	5.0	—	0.0	0.0	—	10.0	14.5	19.5	23.5	22.0	20.5
13	10.0	7.0	0.0	0.0	—	5.0	11.0	15.0	21.0	23.0	—	23.0
14	10.0	—	1.0	0.0	0.0	6.0	12.0	—	21.5	23.5	24.0	20.5
15	10.0	8.0	1.0	0.0	0.0	6.0	11.0	15.0	18.5	22.0	24.0	20.5
16	12.0	10.0	0.0	—	0.0	6.0	—	15.5	20.0	—	25.0	21.0
17	—	10.0	0.0	0.0	0.0	5.0	12.0	17.0	19.5	22.0	24.5	—
18	17.0	11.0	0.0	0.0	0.0	6.0	14.5	18.5	—	21.0	24.0	23.0
19	17.0	6.0	—	0.0	0.0	—	15.0	19.0	20.5	21.5	24.0	23.5
20	16.0	6.0	0.0	0.0	—	10.0	12.0	19.5	20.5	23.5	—	23.5
21	16.0	—	0.0	0.0	0.0	11.0	10.0	—	16.5	24.0	24.0	20.0
22	16.0	2.0	0.0	0.0	0.0	7.0	9.5	20.5	16.0	24.5	23.5	15.5
23	15.0	2.0	1.0	—	0.0	5.0	—	21.0	17.0	—	21.0	14.5
24	—	2.0	2.0	0.0	0.0	5.0	10.0	19.5	16.5	24.0	19.5	—
25	14.0	2.0	2.0	0.0	0.0	5.0	9.0	19.0	—	24.0	20.0	19.0
26	14.0	4.0	—	0.0	0.0	—	9.0	20.5	18.5	23.5	19.5	18.0
27	15.0	4.0	0.0	0.0	—	5.0	11.0	20.5	20.0	23.0	—	14.0
28	12.0	—	0.0	0.0	0.0	5.0	11.0	—	21.0	21.0	19.0	16.5
29	12.0	1.0	0.0	0.0	0.0	3.0	12.0	19.5	19.5	20.0	20.0	13.0
30	12.0	1.0	0.0	—	—	3.0	—	16.0	20.0	—	15.5	10.0
31	—	—	0.0	0.0	—	1.0	—	14.5	—	21.0	21.0	—
MONTH	13.5	5.5	1.0	0.0	0.0	3.5	9.5	16.0	19.5	21.5	21.0	18.5
YEAR	11.0											

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1235	0.51	470.	17.0	***
11-09-71	1450	7.9	250.	5.0	7.7
12-14-71	1120	34.	*****	1.0	***
02-07-72	1320	1.7	*****	0.0	***
03-14-72	1305	50.	400.	6.0	7.1
04-18-72	1250	23.	570.	15.0	7.7
05-09-72	1010	885.	180.	11.0	***
08-29-72	1115	2.5	*****	20.0	***

06903400 CHARITON RIVER NEAR CHARITON, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	OCTOBER			NOVEMBER			DECEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.48	109	.14	36	325	49	8.9	45	1.1
2	.48	237	.31	275	732	544	11	32	.95
3	.58	161	.25	156	497	209	12	25	.81
4	.56	[illegible]	.20	185	482	242	12	43	1.4
5	.57	84	.13	81	231	51	12	52	1.7
6	.63	67	.11	32	114	9.8	12	63	2.0
7	.72	98	.19	19	112	5.7	13	73	2.6
8	.82	168	.37	13	102	3.6	17	51	2.3
9	.67	140	.25	9.7	132	3.5	17	86	3.9
10	.64	107	.18	6.8	124	2.3	25	54	3.6
11	.62	88	.15	5.5	118	1.8	30	64	5.2
12	.62	93	.16	4.8	85	1.1	45	65	7.9
13	.62	91	.15	4.3	90	1.0	74	138	28
14	.62	82	.14	3.5	97	.92	27	135	9.8
15	.62	78	.13	3.3	116	1.0	199	950	510
16	.64	95	.16	3.0	158	1.3	213	510	293
17	.67	113	.20	3.2	178	1.5	203	545	299
18	.65	132	.23	4.2	128	1.5	192	240	124
19	.72	124	.24	6.8	64	1.2	101	170	46
20	1.5	75	.30	6.8	61	1.1	50	130	18
21	3.4	103	.95	10	66	1.8	29	115	9.0
22	3.2	153	1.3	22	64	3.8	19	93	4.8
23	2.1	219	1.2	15	129	5.2	19	118	6.1
24	1.6	123	.53	10	99	2.7	20	105	5.7
25	2.0	170	.92	7.8	115	2.4	20	58	3.1
26	1.5	312	1.3	6.5	73	1.3	19	48	2.5
27	1.2	172	.56	6.3	73	1.2	17	44	2.0
28	1.0	122	.33	6.3	58	.99	17	42	1.9
29	1.9	100	.51	6.9	46	.86	14	51	1.9
30	3.3	189	1.7	8.2	50	1.1	19	55	2.8
31	5.3	209	3.0	--	--	--	22	50	3.0
TOTAL	39.48	--	16.28	958.9	--	1153.67	1488.9	--	1404.06

	JANUARY			FEBRUARY			MARCH		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	23	42	2.6	1.7	21	.10	32	164	14
2	19	39	2.0	1.7	37	.17	30	46	3.7
3	18	39	1.9	1.7	24	.11	26	44	3.1
4	16	44	1.9	1.7	32	.15	23	38	2.4
5	13	35	1.2	1.7	23	.11	20	110	5.9
6	10	34	.92	1.7	18	.08	17	110	5.0
7	8.2	45	1.0	1.7	20	.09	16	47	2.0
8	7.2	63	1.2	1.7	47	.22	14	38	1.4
9	15	85	3.4	1.4	72	.27	12	63	2.0
10	15	63	2.6	1.5	46	.19	11	63	1.9
11	17	46	2.1	1.6	38	.16	12	38	1.2
12	13	44	1.5	1.6	41	.18	16	74	3.2
13	10	71	1.9	1.7	44	.20	77	507	105
14	7.0	48	.91	2.0	82	.44	67	270	49
15	5.0	42	.57	6.0	118	1.9	85	247	57
16	8.0	57	1.2	35	102	9.6	82	168	37
17	6.0	40	.65	100	69	19	57	155	24
18	5.0	34	.46	140	76	29	48	157	20
19	5.5	36	.54	150	58	23	42	188	21
20	6.0	35	.57	160	51	22	33	226	20
21	5.8	32	.50	120	55	18	27	240	17
22	5.5	28	.42	80	54	12	24	138	8.9
23	5.4	43	.63	56	43	6.5	21	136	7.7
24	5.0	52	.70	40	46	5.0	17	209	9.6
25	4.5	23	.28	30	41	3.3	16	272	12
26	3.6	14	.14	25	44	3.0	15	188	7.6
27	3.0	22	.18	20	43	2.3	15	87	3.5
28	2.2	22	.13	22	47	2.8	15	45	1.8
29	2.0	14	.08	28	90	6.8	16	31	1.3
30	1.9	12	.06	--	--	--	14	87	3.3
31	1.8	12	.06	--	--	--	14	202	7.6
TOTAL	266.3	--	32.30	1035.4	--	166.67	914	--	459.1

06903400 CHARITON RIVER NEAR CHARITON, IOWA--CONTINUED

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

	APRIL			MAY			JUNE		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	17	122	5.6	158	2260	1020	17	289	13
2	18	109	5.3	81	440	114	12	340	11
3	16	107	4.6	81	445	97	8.9	234	5.6
4	16	107	4.6	51	420	58	7.7	198	4.1
5	15	122	4.9	26	308	22	9.8	450	12
6	15	137	5.5	20	310	17	67	1140	206
7	14	153	5.8	468	914	1550	39	1220	128
8	12	71	2.3	1340	577	2060	22	472	28
9	10	85	2.3	1070	428	1230	37	440	44
10	9.5	108	2.8	1140	225	693	15	843	34
11	9.1	156	3.8	562	200	303	7.9	850	18
12	12	193	6.3	105	210	60	5.2	833	12
13	20	174	9.4	192	667	438	4.3	668	7.8
14	15	180	7.3	192	450	233	21	654	37
15	11	201	6.0	189	378	193	170	1080	496
16	17	182	8.4	98	315	83	37	362	36
17	34	180	17	52	318	45	12	315	10
18	24	203	13	32	240	21	10	369	10
19	20	178	9.6	21	150	8.5	15	402	16
20	58	202	31	15	136	5.5	9.8	358	9.5
21	329	1170	1420	12	126	4.1	6.7	193	3.5
22	395	765	963	9.9	122	3.3	5.0	150	2.0
23	270	800	583	8.1	159	3.5	3.9	203	2.1
24	159	330	142	8.2	196	4.3	3.3	375	3.3
25	61	270	44	11	148	4.4	2.8	382	2.9
26	35	250	24	14	161	5.1	2.3	305	1.9
27	25	220	15	9.9	144	3.8	1.8	188	.91
28	20	270	15	14	223	28	1.7	450	2.1
29	19	180	9.2	326	1680	1880	1.8	282	1.4
30	27	280	20	56	395	60	1.6	222	.96
31	--	--	--	28	340	26	--	--	--
TOTAL	1702.6	--	3390.7	6390.1	--	10274.5	558.5	--	1159.07

	JULY			AUGUST			SEPTEMBER		
DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	.89	178	.43	7.2	360	7.0	1.8	208	1.0
2	.92	208	.52	6.3	273	4.6	4.0	173	1.9
3	1.6	307	1.3	6.9	373	6.9	8.9	219	5.3
4	1.2	378	1.2	5.2	188	2.6	36	275	27
5	1.0	179	.48	3.9	147	1.5	20	391	21
6	.91	220	.54	489	1110	1470	12	431	14
7	.90	202	.49	380	446	458	8.6	348	8.1
8	.81	213	.47	131	419	148	6.2	235	3.9
9	.81	192	.42	55	329	49	4.6	210	2.6
10	.81	155	.34	27	267	19	5.3	203	2.9
11	.75	80	.16	15	229	9.3	18	262	13
12	.74	241	.48	10	199	5.4	744	699	1750
13	.78	212	.45	7.5	195	3.9	1770	266	1280
14	.94	180	.46	6.1	183	3.0	2000	242	1310
15	1.5	141	.57	4.7	180	2.3	1940	122	639
16	1.6	171	.74	3.9	172	1.8	1240	111	372
17	1.8	198	.96	3.5	165	1.6	921	128	318
18	3.3	175	1.6	2.9	150	1.2	315	112	95
19	22	208	12	2.6	151	1.1	55	78	12
20	94	630	160	2.3	155	.96	37	90	9.0
21	109	735	216	2.5	160	1.1	26	83	5.8
22	95	735	189	2.3	170	1.1	20	108	5.8
23	34	479	44	2.2	184	1.1	16	228	9.8
24	18	323	16	2.1	200	1.1	14	172	6.5
25	9.8	268	7.1	16	325	14	12	112	3.6
26	88	725	168	16	288	12	11	114	3.4
27	140	669	253	7.9	273	5.8	9.2	69	1.7
28	46	373	46	5.7	278	4.3	8.0	62	1.3
29	45	508	62	3.1	322	2.7	11	62	1.8
30	24	440	29	1.9	190	.97	11	41	1.2
31	12	398	13	1.7	272	1.2	--	--	--
TOTAL	738.06	--	1226.71	1231.4	--	2242.53	9285.6	--	5926.6

TOTAL DISCHARGE FOR YEAR (CFS-DAYS)	24611.45
TOTAL SUSPENDED-SEDIMENT DISCHARGE FOR YEAR (TONS)	27452.19

06903400 CHARITON RIVER NEAR CHARITON, IOWA--CONTINUED

WATER QUALITY DATA, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)	SUS. SED. FALL DIAM. % FINER THAN .002 MM	SUS. SED. FALL DIAM. % FINER THAN .004 MM	SUS. SED. FALL DIAM. % FINER THAN .008 MM	SUS. SED. FALL DIAM. % FINER THAN .016 MM	SUS. SED. FALL DIAM. % FINER THAN .031 MM	SUS. SED. FALL DIAM. % FINER THAN .062 MM
NOV.										
02...	9.0	299	1020	823	56	66	75	86	88	92
MAY										
29...	17.0	562	3170	4810	61	74	86	92	95	97
JUNE										
15...	18.5	228	1800	1110	58	70	80	89	95	97
AUG.										
06...	19.0	289	1780	1390	48	57	70	80	94	98
06...	20.0	830	1030	2310	61	72	76	88	94	96

Water-quality records at periodic and miscellaneous stations

The Geological Survey collects data on specific conductance, pH and water temperature at many streamgaging stations and low-flow partial-record stations other than regular water-quality stations. These data are collected during routine visits to the stations for purpose of measuring streamflow. Periodic water-quality stations are those at regular streamgaging stations where samples are taken at 4- to 6-week intervals. Miscellaneous water-quality stations are those at low-flow partial-record stations where samples are taken on approximately a yearly basis. Additional information pertaining to location, drainage area and period of record are published in Part 1 of this report.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

ANALYSES OF PERIODIC STATIONS

TURKEY RIVER BASIN

05411600 - TURKEY R AT SPILLVILLE, IOWA (LAT 43°12'28" LONG 091°56'56")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-12-71	1200	26.	475.		8.1
11-15-71	1600	31.	520.	9.0	8.5
02-07-72	1700	17.	475.	0.0	8.4
03-20-72	1600	177.	390.	1.5	7.8
05-01-72	1600	192.	430.	14.0	8.0
06-13-72	1400	44.	540.	27.0	8.5
07-24-72	1700	123.	490.	29.0	8.5

05412500 - TURKEY R AT GARBER, IOWA (LAT 42°44'24" LONG 091°15'42")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
11-17-71	1600	348.	570.	11.5	8.4
02-09-72	1600	196.	625.	0.0	8.0
03-21-72	1400	1610.	390.	5.5	7.6
05-03-72	1000	2600.	450.	12.0	8.1
07-25-72	1400	1000.	480.	25.5	8.4
09-06-72	1300	488.	550.	19.5	***

LITTLE MAQUOKETA RIVER BASIN

05414500 - LITTLE MAQUOKETA R NEAR DURANGO, IOWA (LAT 42°33'18" LONG 090°44'46")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-14-71	1430	23.	550.	0.0	***
11-18-71	1000	68.	650.	10.5	8.2
02-10-72	0900	30.	675.	0.0	7.9
03-03-72	1430	170.	580.	12.5	8.6
03-23-72	0900	80.	540.	1.0	8.3
06-15-72	0900	61.	430.	19.0	8.1
07-26-72	1700	246.	540.	20.0	8.1

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
MAQUOKETA RIVER BASIN					
05417700 - BEAR CREEK NEAR MONMOUTH, IOWA (LAT 42°02'18" LONG 090°52'59")					
11-18-71	1500	12.	520.	10.5	8.3
02-10-72	1300	11.	575.	0.0	8.0
03-23-72	1100	28.	250.	3.0	***
05-04-72	1100	101.	500.	15.0	8.1
06-13-72	1200	30.	465.		8.5
07-27-72	1300	122.	320.	26.5	7.9
05418500 - MAQUOKETA R NEAR MAQUOKETA, IOWA (LAT 42°05'05" LONG 090°38'04")					
11-19-71	0900	374.	550.	6.5	8.9
02-10-72	1500	551.	575.	0.0	7.9
03-23-72	1400	1240.	670.	2.0	7.7
05-04-72	0900	2450.	600.	16.0	8.2
06-13-72	1700	1130.	450.	24.5	8.2
07-27-72	1000	1380.	660.	25.5	8.0
WAPSIPINICON RIVER BASIN					
05420560 - WAPSIPINICON R NEAR ELMA, IOWA (LAT 43°14'34" LONG 092°31'48")					
10-19-71	1445	9.5	380.	18.5	***
12-02-71	1005	15.	435.	0.0	***
01-12-72	0915	12.	435.	0.5	***
02-25-72	0920	9.7	430.	0.5	***
04-03-72	1450	27.	390.	1.0	***
05-16-72	1055	30.	390.	18.0	***
06-27-72	1110	9.4	360.	23.0	***
08-08-72	1125	26.	360.	14.0	***
09-19-72	1115	27.	440.	21.0	***
05421000 - WAPSIPINICON R AT INDEPENDENCE, IOWA (LAT 42°27'49" LONG 091°53'42")					
10-12-71	0900	48.	390.		8.1
11-15-71	1400	109.	430.	9.0	8.6
02-07-72	1300	53.	575.	0.0	7.8
03-20-72	1200	2790.	200.		7.8
05-01-72	1400	805.	410.	14.0	7.9
06-13-72	1000	212.	420.	21.5	8.2
07-24-72	1200	738.	330.	29.5	7.9

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
WAPSIPINICON RIVER BASIN--CONTINUED					
05422000 - WAPSIPINICON R NEAR DEWITT, IOWA (LAT 41°46'01" LONG 090°32'05")					
10-13-71	1000	206.	420.	19.5	7.8
11-19-71	1200	415.	460.	7.0	8.5
02-11-72	0800	293.	425.	0.0	7.7
05-03-72	1500	3650.	330.	19.0	8.0
06-14-72	1100	1120.	295.		8.0
07-27-72	1700	1990.	410.		8.1
IOWA RIVER BASIN					
05449000 - EAST BRANCH IOWA R NEAR KLEMME, IOWA (LAT 43°00'31" LONG 093°37'42")					
10-05-71	1015	5.3	810.	18.5	***
11-12-71	0915	12.	860.	4.0	***
12-28-71	1255	16.	900.	0.5	***
02-08-72	1400	3.9	850.	0.5	***
03-22-72	1035	51.	620.	0.0	7.7
05-01-72	1030	99.	570.	11.5	***
06-13-72	1015	251.	700.	19.0	***
07-24-72	1505	56.	850.	28.0	***
09-07-72	1420	15.	840.	19.5	7.9
05449500 - IOWA RIVER NEAR ROWAN, IOWA (LAT 42°45'36" LONG 093°37'23")					
11-03-71	1350	166.	660.	11.5	***
11-12-71	1120	80.	780.	5.0	***
12-28-71	1420	86.	800.	0.5	***
02-11-72	0905	22.	750.	0.5	***
03-22-72	1225	238.	550.	0.0	7.4
05-01-72	1240	226.	680.	11.5	***
06-13-72	1350	1720.	540.	23.0	***
07-25-72	0835	213.	770.	21.0	***
09-07-72	1130	52.	720.	19.0	8.0
05451500 - IOWA R AT MARSHALLTOWN, IOWA (LAT 42°04'00" LONG 092°54'18")					
12-01-71	1505	156.	480.	0.0	8.2
01-04-72	1600	180.	610.	0.0	8.1
04-05-72	1140	377.	650.	7.0	8.3
05-16-72	1200	855.	700.	21.0	8.6
06-08-72	1445	4800.	390.	0.0	7.9
06-09-72	1200	6380.	340.	22.0	8.2
08-09-72	1000	4150.	600.	17.5	8.6
09-12-72	1030	1010.	690.	19.0	8.0

IOWA RIVER BASIN--CONTINUED

05452000 - SALT CREEK NEAR ELBERON, IOWA (LAT 41°57'51" LONG 092°18'47")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-18-71	0900	9.3	520.	17.0	***
12-02-71	1100	11.	430.	0.0	8.1
01-05-72	1315	6.5	675.	0.0	8.0
04-04-72	1515	26.	450.	6.5	8.1
05-15-72	1200	170.	600.		8.5
09-11-72	1000	125.	520.	19.0	8.0

05453000 - BIG BEAR CREEK AT LADORA, IOWA (LAT 41°44'58" LONG 092°10'55")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1600	7.6	910.	20.0	***
11-29-71	1230	10.	625.	1.0	8.3
01-05-72	1500	10.	520.	0.0	8.0
04-03-72	1200	48.	460.	1.0	8.4
05-18-72	1400	182.	460.	18.5	8.5
08-07-72	1300	807.	270.	18.0	8.2
09-15-72	1500	132.	530.	21.5	8.3

05453100 - IOWA R AT MARENGO, IOWA (LAT 41°48'41" LONG 092°03'42")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1000	177.	480.	17.0	***
11-29-71	1000	427.	470.	1.0	8.3
01-03-72	0950	347.	750.	0.0	8.1
04-03-72	1030	836.	650.	1.5	8.4
05-19-72	1230	1690.	460.	18.5	8.3
08-07-72	0920	7600.	400.	18.5	7.9
09-15-72	1045	1670.	620.	19.5	8.2

05454000 - RAPID C NR IOWA CITY, IOWA (LAT 41°41'19" LONG 091°29'15")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-27-71	0930	0.21	550.	15.0	[illegible]
05454000	1100	2.6	370.	0.1	7.9
12-28-71	1040	12.	*****	0.0	***
01-24-72	1030	6.1	*****	0.0	***
02-23-72	1140	5.3	650.	0.0	8.1
03-28-72	0945	12.	470.	4.0	8.3
05-30-72	1405	20.	490.	15.5	9.0
06-20-72	1210	39.	440.	****	7.7
07-24-72	1120	33.	*****	21.0	***
08-23-72	1535	12.	450.	19.5	7.7
09-26-72	1025	4.4	480.	17.0	8.7

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
IOWA RIVER BASIN--CONTINUED					
05454300 - CLEAR CREEK NEAR CORALVILLE, IOWA (LAT 41°40'36" LONG 091°35'55")					
10-26-71	1200	2.8	550.	15.5	8.0
11-23-71	0900	4.7	420.	3.0	7.8
02-23-72	1400	14.	610.	0.0	7.5
03-28-72	1200	40.	360.	4.0	8.2
05-26-72	1200	79.	450.	21.5	8.6
06-20-72	0900	429.	230.	19.0	7.3
08-25-72	1500	68.	480.	22.0	8.2
05455010 - SOUTH BRANCH RALSTON CREEK AT IOWA CITY, IOWA (LAT 41°39'05" LONG 091°30'27")					
10-27-71	1040	0.50	450.	15.5	7.4
11-01-71	1600	13.	210.		***
02-22-72	1600	1.0	760.	0.0	7.7
03-28-72	1400	1.5	470.		8.3
06-20-72	1500	4.3	530.	17.0	8.0
07-24-72	1400	2.1	480.	21.0	8.0
08-22-72	1200	0.87	500.	24.5	8.1
05455500 - ENGLISH R AT KALONA, IOWA (LAT 41°27'59" LONG 091°42'56")					
10-26-71	1000	16.	275.	15.0	8.0
11-22-71	1500	39.	425.		8.0
02-22-72	1200	126.	460.	0.0	7.3
04-27-72	1200	691.	400.	17.5	8.3
06-21-72	1000	872.	300.	18.0	7.6
08-24-72	1000	176.	460.	22.0	7.5
05457700 - CEDAR R AT CHARLES CITY, IOWA (LAT 43°03'45" LONG 092°40'23")					
10-20-71	0900	190.	590.	14.0	***
12-01-71	1520	264.	460.	0.5	***
01-11-72	1410	216.	640.	0.5	***
02-24-72	1440	187.	620.	0.5	***
04-04-72	0735	345.	580.	1.0	***
05-16-72	1515	447.	500.	21.0	***
06-27-72	1520	222.	400.	24.0	***
08-08-72	1545	326.	520.	19.0	***
09-19-72	1530	342.	520.	26.0	***

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)

IOWA RIVER BASIN--CONTINUED

05458000 - LITTLE CEDAR R NEAR IONIA, IOWA (LAT 43°02'05" LONG 092°30'05")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1620	33.	400.	18.0	***
12-02-71	0815	41.	405.	0.0	***
01-11-72	1520	32.	425.	0.5	***
02-24-72	1550	23.	440.	0.5	***
04-03-72	1615	91.	400.	1.0	***
05-16-72	1330	117.	440.	20.5	***
08-08-72	1400	93.	440.	19.0	***
06-27-72	1345	36.	280.	23.0	***
09-19-72	1355	78.	440.	26.0	***

05458500 - CEDAR R AT JANESVILLE, IOWA (LAT 42°38'54" LONG 092°27'54")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1345	331.	410.	14.0	***
12-01-71	1100	704.	300.	0.5	***
12-10-71	1055	503.	580.	5.0	***
01-11-72	1030	314.	570.	0.5	***
02-24-72	1000	233.	880.	0.5	***
04-04-72	1205	591.	520.	1.0	***
05-17-72	1020	757.	420.	19.0	***
06-28-72	1045	313.	430.	22.0	***
08-09-72	1115	642.	540.	19.0	***
09-20-72	1050	558.	480.	22.0	***

05458900 - W FK CEDAR R AT FINCHFORD, IOWA (LAT 42°37'50" LONG 092°32'25")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1515	45.	630.	14.0	***
12-01-71	0900	269.	360.	0.0	***
12-10-71	1310	291.	510.	4.5	***
01-11-72	0915	124.	500.	0.5	***
02-24-72	0845	58.	540.	0.5	***
04-04-72	1345	300.	570.	4.0	***
05-17-72	1230	523.	600.	21.0	***
06-28-72	1300	318.	580.	24.0	***
08-09-72	1315	466.	625.	21.0	***
09-20-72	1300	156.	460.	22.0	***

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)

IOWA RIVER BASIN--CONTINUED

05459000 - SHELL ROCK R NEAR NORTHWOOD, IOWA (LAT 43°24'51" LONG 093°13'14")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1245	20.	560.	17.5	***
12-02-71	1245	117.	750.	0.0	***
01-12-72	1125	40.	825.	0.5	***
02-25-72	1130	28.	800.	0.5	***
04-03-72	1235	144.	620.	1.0	***
05-15-72	1235	162.	560.	17.0	***
06-26-72	1230	43.	540.	23.0	***
08-07-72	1235	108.	600.	20.0	***
09-19-72	1325	96.	690.	28.0	***

05459500 - WINNEBAGO R AT MASON CITY, IOWA (LAT 43°09'54" LONG 093°11'33")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1030	52.	825.	17.5	***
12-02-71	1425	212.	990.	0.0	***
01-12-72	1410	92.	680.	1.0	***
02-25-72	1325	38.	840.	0.5	***
04-03-72	1020	213.	850.	2.0	***
05-15-72	1430	272.	950.	18.0	***
06-26-72	1515	128.	800.	22.0	***
08-07-72	1415	136.	900.	21.0	***
09-18-72	1505	185.	1090.	27.0	***

05462000 - SHELL ROCK R AT SHELL ROCK, IOWA (LAT 42°39'10" LONG 092°35'46")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1015	269.	530.	15.0	***
10-20-71	1100	222.	500.	14.0	***
12-01-71	1310	574.	530.	0.5	***
01-11-72	1220	327.	710.	0.5	***
02-24-72	1230	208.	700.	0.5	***
04-04-72	0945	635.	520.	1.0	***
05-17-72	0805	842.	530.	18.0	***
06-28-72	0840	435.	450.	21.0	***
08-09-72	0900	569.	600.	16.5	***
09-20-72	0850	513.	620.	22.0	***

IOWA RIVER BASIN--CONTINUED

05463000 - BEAVER CREEK AT NEW HARTFORD, IOWA (LAT 42°30'50" LONG 092°37'55")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-21-71	1235	25.	400.	17.0	***
11-03-71	1125	110.	500.	11.5	***
11-30-71	1000	48.	380.	30.0	***
01-10-72	1010	25.	470.	0.5	***
02-23-72	1045	15.	510.	0.5	***
04-04-72	1530	91.	560.	5.0	***
05-17-72	1420	230.	550.	24.0	***
06-28-72	1450	170.	600.	24.0	***
08-09-72	1500	459.	550.	21.0	***
09-20-72	1455	110.	600.	22.0	***

05463500 - BLACK HAWK CREEK AT HUDSON, IOWA (LAT 42°24'28" LONG 092°27'47")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-21-71	1040	20.	520.	17.0	***
11-30-71	1210	28.	420.	5.0	***
01-10-72	1210	23.	570.	0.5	***
02-23-72	1300	12.	520.	2.0	***
04-05-72	0815	68.	530.	9.0	***
05-18-72	0725	157.	540.	19.0	***
06-29-72	0755	178.	530.	21.0	***
08-10-72	0800	429.	580.	17.5	***
09-21-72	1115	87.	560.		***

05464000 - CEDAR R AT WATERLOO, IOWA (LAT 42°29'44" LONG 092°20'03")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-21-71	0735	761.	450.	17.0	***
11-30-71	1420	1670.	500.	3.0	***
01-10-72	1345	1010.	570.	14.5	***
02-23-72	1435	604.	460.	1.0	***
04-05-72	1020	1780.	570.	7.0	***
05-19-72	1005	2630.	510.	21.0	***
06-29-72	1020	1790.	490.	23.0	***
08-10-72	1050	2620.	580.	16.5	***
09-21-72	1200	1620.	540.	17.5	***

IOWA RIVER BASIN--CONTINUED

05464500 - CEDAR RIVER AT CEDAR RAPIDS, IOWA (LAT 41°58'14" LONG 091°40'01")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
12-23-71	0900	2120.	450.	0.5	***
02-24-72	0900	743.	840.	0.0	7.7
03-24-72	1000	4930.	750.	4.0	8.1
04-25-72	0900	4270.	570.		8.1
05-24-72	1100	2900.	320.	24.5	8.0
06-23-72	1000	3420.	510.	20.0	8.0
08-24-72	1300	2180.	460.		***

05464640 PRAIRIE CREEK AT FAIRFAX, IOWA (LAT 41°55'22", LONG 091°47'02")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
11-26-71	1000	13.	350.	2.0	7.8
02-24-72	1500	16.	600.	0.0	8.0
03-27-72	1100	71.	475.		8.4
04-27-72	0900	174.	540.	18.0	8.3
05-30-72	1000	115.	500.	16.0	6.5
06-21-72	1400	124.	560.	18.0	8.5
07-27-72	1100	429.	500.	19.0	8.2

05465500 - IOWA R AT WAPELLO, IOWA (LAT 41°10'48" LONG 091°10'57")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
12-09-71	1210	3020.	610.	3.0	8.3
01-27-72	1130	1480.	450.	0.0	8.2
04-11-72	1500	4960.	525.	12.0	8.6
05-25-72	1150	6680.	610.	24.0	8.5
06-29-72	1300	8520.	440.	23.5	8.0
09-21-72	1100	5520.	650.	15.0	8.1

SKUNK RIVER BASIN

05470000 - SOUTH SKUNK R NEAR AMES, IOWA (LAT 42°04'05" LONG 093°37'02")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-07-71	1015	1.4	690.	13.0	***
11-16-71	1355	7.2	800.	10.5	***
12-29-71	0915	7.0	1010.	0.5	***
02-09-72	0950	3.4	580.	0.5	***
03-20-72	1425	129.	560.	17.0	7.8
05-04-72	1345	135.	740.	11.5	***
06-21-72	1210	254.	770.	17.0	***
07-27-72	1000	90.	730.	19.5	***
09-11-72	1055	362.	750.	20.0	***

SKUNK RIVER BASIN--CONTINUED

05470500 - SQUAW CREEK AT AMES, IOWA (LAT 42°01'21" LONG 093°37'45")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-07-71	1145	0.07	1090.	14.0	***
11-03-71	1230	14.	590.	7.0	***
11-16-71	1150	3.7	740.	10.5	***
12-29-71	1310	2.0	900.	0.5	***
01-18-72	1050	1.8	950.	0.5	***
02-09-72	1130	0.32	810.	0.5	***
03-20-72	1215	49.	640.	17.0	8.0
05-04-72	0940	81.	710.	11.5	***
06-21-72	0945	140.	800.	15.0	***
07-27-72	1155	35.	700.	20.5	***
09-11-72	1315	172.	730.	20.0	***

05471000 - S SKUNK R BELOW SQUAW CK NEAR AMES, IOWA (LAT 42°00'31" LONG 093°35'57")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-07-71	1510	0.95	780.	15.0	***
11-03-71	1045	56.	610.	5.5	***
11-16-71	1000	5.3	770.	12.0	***
12-29-71	1200	5.7	1000.	0.5	***
01-19-72	1030	0.63	900.	0.5	***
02-09-72	1230	0.22	620.	0.5	***
03-20-72	1010	204.	490.	12.5	7.5
05-06-72	1130	226.	720.	11.5	***
06-21-72	1400	420.	800.	18.0	***
07-27-72	1400	136.	710.	20.5	***
09-11-72	1520	559.	710.	20.5	***

05471500 - S SKUNK R NEAR OSKALOOSA, IOWA (LAT 41°21'19" LONG 092°39'31")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1000	63.	690.	14.0	***
11-09-71	1000	102.	400.		***
02-04-72	1200	39.	700.	0.0	7.3
03-13-72	1140	1040.	390.	4.5	7.7
04-17-72	1115	458.	550.	16.0	8.0
07-10-72	1200	527.	410.	25.5	8.1

05472500 - NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA (LAT 41°18'03" LONG 092°12'16")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
01-17-72	1000	25.	570.	0.0	7.9
03-01-72	1000	1690.	190.	0.0	7.6
04-10-72	1000	135.	490.	3.5	8.2
05-23-72	1000	333.	580.	21.0	8.2
06-28-72	1200	354.	470.	23.0	7.8
08-17-72	1100	399.	600.	28.0	7.6

SKUNK RIVER BASIN--CONTINUED

05474000 - SKUNK R AT AUGUSTA, IOWA (LAT 40°45'13" LONG 091°16'40")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
12-09-71	1100	258.	500.	4.0	8.4
01-18-72	1600	490.	690.	0.5	8.5
03-07-72	1400	2180.	440.	6.0	7.6
04-11-72	1600	1170.	490.		8.2
05-24-72	1600	1890.	730.	25.0	8.6
06-27-72	1200	2970.	580.	24.0	8.0
08-15-72	1600	5630.	650.		8.7
09-20-72	1200	2150.	560.	21.5	8.0

DES MOINES RIVER BASIN

05476500 - DES MOINES R AT ESTHERVILLE, IOWA (LAT 43°23'51" LONG 094°50'38")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
11-03-71	1350	61.	1010.	5.0	***
12-13-71	1150	64.	1500.	0.5	***
01-27-72	1210	15.	1600.	0.5	***
03-08-72	1235	124.	380.	1.0	***
04-17-72	1125	283.	805.	18.0	***
05-30-72	1220	730.	900.	16.0	***
07-10-72	1200	256.	925.	25.0	***
08-21-72	1250	86.	900.	27.5	***

05476750 - DES MOINES R AT HUMBOLDT, IOWA (LAT 42°43'12" LONG 094°13'06")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1140	120.	750.	16.5	***
10-14-71	1445	58.	750.	11.0	***
11-15-71	1445	206.	850.	10.0	***
12-27-71	1030	132.	1000.	0.5	***
02-08-72	0850	76.	900.	0.5	***
03-23-72	1025	1440.	590.	2.5	***
05-03-72	0810	2410.	760.	9.5	***
06-15-72	1230	1260.	820.	21.0	***
07-28-72	1055	859.	900.	20.5	***
09-05-72	1005	210.	710.	17.0	8.5

05478000 - E FORK DES MOINES R NEAR BURT, IOWA (LAT 43°12'38" LONG 094°10'35")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
09-20-71	1423	0.33	725.	11.0	***
10-13-71	1440	0.97	900.	9.0	***
11-05-71	0925	31.	800.	4.0	***
12-13-71	0945	34.	850.	0.5	***
01-27-72	1425	4.2	850.	0.5	***
03-24-72	1040	155.	560.	2.0	***
04-17-72	0900	52.	620.	18.0	***
05-30-72	0940	157.	690.	14.0	***
07-10-72	0930	84.	700.	23.5	***
08-21-72	0945	22.	530.	26.5	***

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
DES MOINES RIVER BASIN--CONTINUED					
05479000 - E FORK DES MOINES R AT DAKOTA CITY, IOWA (LAT 42°43'26" LONG 094°11'30")					
10-04-71	0930	15.	790.	15.0	***
10-14-71	1315	20.	800.	10.0	***
11-15-71	0850	70.	760.	6.0	***
12-27-71	0905	79.	900.	0.5	***
02-08-72	1045	26.	820.	0.5	***
03-23-72	0840	456.	560.	2.0	8.0
05-02-72	1435	1150.	540.	10.0	***
06-15-72	0910	1580.	650.	19.0	***
07-28-72	0915	563.	750.	20.5	***
09-05-72	1155	90.	700.	19.0	8.6
05480000 - LIZARD CREEK NEAR CLARE, IOWA (LAT 42°32'35" LONG 094°20'45")					
10-06-71	1245	2.6	920.	17.0	***
11-17-71	1445	45.	730.		***
12-28-71	0820	17.	1000.	0.5	***
02-07-72	1230	3.2	1000.	0.5	***
03-21-72	1115	86.	560.	4.0	***
05-02-72	1115	515.	690.	6.0	***
06-12-72	0840	98.	825.	19.0	***
07-24-72	0825	142.	750.	23.0	***
09-06-72	1215	64.	775.	19.0	8.2
05480500 - DES MOINES R AT FORT DODGE, IOWA (LAT 42°30'22" LONG 094°12'04")					
12-24-71	1350	48.	750.	16.5	***
10-06-71	1450	111.	760.	18.0	***
10-08-71	1435	45.	745.	14.0	***
11-19-71	0845	750.	780.	6.0	***
12-27-71	1325	120.	690.	0.5	***
02-07-72	1455	274.	960.	0.5	***
05-03-72	1035	4520.	710.	10.0	***
06-15-72	1445	3100.	730.	23.0	***
07-28-72	0830	1600.	760.	20.5	***
09-06-72	1410	359.	830.	19.5	8.2
05481000 - BOONE R NEAR WEBSTER CITY, IOWA (LAT 42°26'01" LONG 093°48'12")					
10-05-71	0915	17.	800.	13.5	***
11-12-71	1325	92.	830.	9.0	***
12-30-71	0835	73.	900.	0.5	***
02-11-72	1055	24.	1000.	0.5	***
03-22-72	1430	35.	530.	0.0	7.2
05-01-72	1505	918.	725.	11.5	***
06-16-72	1220	1100.	750.	18.0	***
07-25-72	1030	506.	800.	25.0	***
09-12-72	0830	124.	750.	19.0	***

DES MOINES RIVER BASIN--CONTINUED

05481300 - DES MOINES R NEAR STRATFORD, IOWA (LAT 42°15'04" LONG 093°59'52")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-09-71	0940	151.	795.	13.0	***
11-17-71	1025	540.	840.		***
12-30-71	1155	484.	820.	0.5	***
01-18-72	1300	268.	1050.	0.5	***
02-11-72	1305	192.	1100.		***
03-23-72	1445	2610.	560.	5.0	7.8
05-03-72	1400	6190.	730.	10.0	***
06-16-72	0835	4670.	700.	17.0	***
07-25-72	1400	3180.	570.	25.0	***
09-12-72	1100	1020.	740.	19.0	***

05482170 - BIG CEDAR CREEK NEAR VARINA, IOWA (LAT 42°41'16" LONG 094°47'52")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1520	0.50	2220.	20.0	***
11-15-71	1130	1.9	1510.	7.0	***
12-28-71	1025	1.3	1700.	0.5	***
03-21-72	0940	16.	850.	4.0	7.9
05-02-72	0855	218.	760.	6.0	***
06-12-72	1100	23.	1000.	19.0	***
07-24-72	1030	19.	820.	23.0	***
09-05-72	1030	6.7	650.	0.0	8.4

05482300 - NORTH RACCOON R NEAR SAC CITY, IOWA (LAT 42°20'28" LONG 094°59'05")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1040	14.	1000.	12.0	***
11-04-71	0955	48.	890.	4.5	***
12-16-71	1300	52.	740.	0.5	***
01-25-72	1415	15.	750.	0.5	***
04-19-72	1210	65.	720.	10.0	***
06-01-72	1145	260.	820.	19.0	***
07-12-72	1310	151.	750.	22.5	***
08-24-72	1540	110.	800.	24.0	***

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
DES MOINES RIVER BASIN--CONTINUED					
05482500 - N RACCOON R NEAR JEFFERSON, IOWA (LAT 41°59'17" LONG 094°22'36")					
10-14-71	1220	25.	700.	14.0	***
11-01-71	1200	280.	630.	7.0	***
12-16-71	0905	95.	775.	0.5	***
01-24-72	0945	41.	740.	0.5	***
03-14-72	0925	1000.	415.	2.5	***
04-20-72	1410	163.	645.	12.0	***
06-05-72	1200	565.	740.	22.0	***
07-14-72	1430	327.	650.	27.0	***
08-25-72	1325	345.	630.	22.0	***
05483000 - E FK HARDIN CREEK NEAR CHURDAN, IOWA (LAT 42°06'27" LONG 094°22'12")					
11-01-71	0925	0.78	710.	10.0	***
12-16-71	1105	0.20	1050.	0.5	***
03-14-72	1055	13.	400.	5.0	***
04-19-72	1425	1.3	645.	1.0	***
06-01-72	1545	11.	800.	19.0	***
07-14-72	1710	5.8	800.	27.0	***
08-25-72	1510	2.2	650.	20.0	***
05483600 - MIDDLE RACCOON RIVER AT PANORA, IOWA (LAT 41°41'14" LONG 094°22'15")					
11-02-71	0955	52.	500.	12.0	***
12-14-71	1420	60.	510.	0.0	***
01-24-72	1155	25.	480.	0.5	***
03-06-72	1415	189.	350.	1.0	***
04-20-72	1245	108.	380.	12.0	***
06-05-72	0920	165.	560.	21.0	***
07-14-72	1220	59.	520.	26.0	***
08-25-72	1040	65.	360.	20.0	***
05484000 - S RACCOON R AT REDFIELD, IOWA (LAT 41°34'48" LONG 094°10'58")					
10-14-71	1020	45.	450.	11.5	***
11-02-71	1215	239.	385.	9.0	***
12-14-71	1040	90.	530.	0.0	***
01-24-72	1345	57.	440.	0.5	***
03-06-72	1245	303.	395.	1.0	***
04-20-72	1115	196.	410.	12.0	***
06-02-72	1245	382.	600.	22.0	***
07-14-72	0930	503.	460.	20.0	***
08-29-72	1015	141.	490.	24.5	***

DES MOINES RIVER BASIN--CONTINUED

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
05484500 - RACCOON R AT VAN METER, IOWA (LAT 41°32'02" LONG 093°56'59")					
11-02-71	1415	475.	490.	10.0	***
12-15-71	1055	240.	560.	0.0	***
01-05-72	1100	102.	850.	0.5	***
03-06-72	1025	1000.	380.	1.0	***
04-20-72	1030	409.	540.	12.0	***
06-02-72	0935	1740.	725.	21.0	***
07-13-72	1100	1280.	500.	23.0	***
05484800 - WALNUT CR AT DES MOINES, IOWA (LAT 41°35'14" LONG 093°42'11")					
12-15-71	1500	7.1	1500.	1.0	8.3
02-01-72	1000	1.7	1550.	0.0	7.9
03-16-72	1200	8.9	810.	2.0	8.4
04-18-72	1400	8.3	800.		8.3
05-31-72	1800	20.	550.	22.0	9.6
08-30-72	0800	8.6	800.	21.0	8.7
05485500 - DES MOINES R BELOW RACCOON R AT DES MOINES, IOWA (LAT 41°34'30" LONG 093°35'48")					
10-04-71	1500	286.	600.	22.0	***
12-15-71	1145	740.	690.	0.5	8.3
02-02-72	1600	315.	600.	0.0	8.2
04-19-72	1000	1640.	520.		8.3
05-31-72	1200	8350.	450.	17.0	9.3
09-29-72	1300	2220.	570.	23.5	8.0
05485640 - FOURMILE CR AT DES MOINES, IOWA (LAT 41°36'50" LONG 093°32'43")					
12-15-71	1330	5.9	1600.	8.2	0.5
02-01-72	1700	1.0	1600.	7.9	***
03-16-72	1600	13.	1050.		8.1
04-19-72	1600	12.	1100.		8.5
05-31-72	1530	17.	950.	22.0	9.3
06-20-72	1145	865.	475.	18.5	7.9
09-29-72	1650	9.5	1000.	29.0	8.8
05486490 - MIDDLE R NEAR INDIANOLA, IOWA (LAT 41°25'27" LONG 093°35'09")					
12-14-71	0900	55.	570.	0.5	8.1
02-02-72	1300	5.5	560.	0.0	8.0
03-16-72	0900	73.	480.		8.2
04-17-72	1505	45.	590.	20.0	8.3
05-30-72	1600	245.	240.	18.0	9.1
08-28-72	1700	72.	540.	28.5	8.5

DES MOINES RIVER BASIN--CONTINUED

05488500 - DES MOINES R NEAR TRACY, IOWA (LAT 41°16'53" LONG 092°51'34")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1230	359.	700.	16.5	***
11-08-71	1230	3270.	450.		7.9
02-02-72	1230	406.	880.	0.0	8.1
03-13-72	1400	4540.	370.	5.0	7.6
04-17-72	1300	1480.	600.	14.0	8.8
07-10-72	1400	3540.	320.	25.5	8.5

05489000 - CEDAR CREEK NEAR BUSSEY, IOWA (LAT 41°13'09" LONG 092°54'38")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-04-71	1400	0.66	950.		***
12-13-71	1300	32.	700.	0.0	7.8
02-04-72	0900	6.7	900.	0.0	7.4
03-13-72	1600	274.	420.	8.5	7.8
04-17-72	1600	335.	470.	14.5	7.7
05-30-72	1200	788.	370.		8.2
07-10-72	1700	17.	600.	26.5	8.4

05489500 - DES MOINES R AT OTTUMWA, IOWA (LAT 41°00'39" LONG 092°24'40")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
01-17-72	1300	746.	740.	0.0	8.3
03-01-72	1300	3310.	650.	0.0	8.0
04-10-72	1300	1940.	600.	4.0	8.5
05-23-72	1300	8280.	820.	21.0	8.3
06-28-72	1100	4610.	700.	23.5	8.3
08-17-72	1400	10200.	460.		8.1
09-15-72	1400	13900.	790.	20.5	8.0

05490500 - DES MOINES R AT KEOSAUQUA, IOWA (LAT 40°43'40" LONG 091°57'35")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
01-20-72	1100	1150.	890.	0.0	8.3
04-11-72	1000	2270.	600.	4.0	8.7
05-24-72	1000	5970.	820.	21.0	9.3
06-27-72	1700	4680.	700.	27.0	8.2
09-15-72	1500	15300.	650.	25.5	8.6

ANALYSES OF PERIODIC STATIONS

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
BIG SIOUX RIVER BASIN					
06483270 - ROCK RIVER AT ROCK RAPIDS, IOWA (LAT 43°26'13" LONG 096°09'58")					
10-04-71	1455	16.	670.	17.0	***
11-04-71	0935	35.	700.	3.5	7.5
12-07-71	1430	44.	850.	0.5	7.7
01-05-72	1540	13.	900.	0.0	8.3
02-09-72	0940	2.2	950.	0.0	7.1
02-29-72	1335	8.1	820.	0.0	7.4
03-13-72	1325	1080.	220.	1.0	7.1
03-23-72	1205	453.	800.	5.0	7.3
04-04-72	1550	123.	1000.	6.0	7.9
05-01-72	1555	572.	750.	10.0	8.0
06-06-72	1635	223.	780.	24.0	7.9
07-10-72	1405	74.	640.	25.0	8.0
08-02-72	1515	96.	675.	22.5	8.1
09-05-72	1545	24.	590.	19.0	8.4
06483500 - ROCK RIVER AT ROCK VALLEY, IOWA (LAT 43°11'58" LONG 096°20'22")					
10-04-71	1350	37.	650.	15.5	***
11-04-71	1110	69.	750.	3.0	7.6
12-07-71	1220	73.	860.	1.0	7.8
01-06-72	1025	20.	1050.	0.0	7.9
02-09-72	1130	6.8	850.	0.0	7.1
02-29-72	1130	14.	830.	0.0	7.6
03-14-72	0945	4470.	250.	1.0	7.3
03-23-72	1020	716.	650.	5.0	7.8
04-05-72	0850	237.	910.	6.0	8.0
05-01-72	1300	647.	780.	10.0	7.8
06-06-72	1410	434.	750.	25.0	7.7
07-10-72	1220	197.	620.	26.5	7.9
08-02-72	1305	295.	700.	24.5	8.0
09-05-72	1410	93.	600.	21.5	8.2
FLOYD RIVER BASIN					
06600100 - FLOYD RIVER AT ALTON, IOWA (LAT 42°58'55" LONG 096°00'03")					
10-05-71	1105	4.0	1200.	15.0	***
11-03-71	1535	9.2	1100.	6.0	7.2
12-07-71	1530	8.1	1150.	1.0	7.7
01-05-72	1310	2.2	2100.	0.0	7.9
02-08-72	1515	1.0	2100.	0.0	7.0
02-29-72	1545	4.1	1500.	0.0	7.4
03-24-72	1400	47.	*****	4.0	8.0
04-04-72	1215	23.	1000.	8.5	8.2
05-02-72	1400	644.	680.	8.5	7.7
06-01-72	1310	56.	900.	20.5	8.0
06-29-72	1055	25.	920.	25.0	7.8
08-03-72	0840	44.	950.	20.0	7.9
09-06-72	0825	11.	950.	18.5	8.0

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)

FLOYD RIVER BASIN--CONTINUED

06600300 - WEST BRANCH FLOYD RIVER NR STRUBLE, IOWA (LAT 42°55'15" LONG 096°10'30")

10-05-71	0930	3.3	950.	17.0	***
11-03-71	1445	5.3	1100.	5.0	7.1
12-07-71	1615	3.9	1150.	1.0	7.5
01-05-72	1200	1.1	1250.	0.0	7.8
02-29-72	1500	15.	520.	0.0	7.4
03-14-72	1105	421.	320.	2.0	7.3
03-23-72	1420	23.	1000.	5.0	7.7
04-01-72	1110	8.3	670.	9.0	8.0
06-01-72	1430	53.	1000.	22.5	8.2
06-23-72	1250	26.	1000.	22.0	7.7
08-03-72	1130	31.	1000.	18.5	8.0
09-05-72	1000	10.	900.	16.0	8.2

MONONA-HARRISON DITCH BASIN

06602400 - MONONA-HARRISON DITCH NEAR TURIN, IOWA (LAT 41°57'52" LONG 095°59'30")

10-07-71	1500	61.	690.	17.0	***
11-02-71	0935	79.	650.	6.0	***
01-07-72	1050	35.	900.	0.0	7.7
02-01-72	1500	27.	625.	0.0	7.5
03-09-72	1120	266.	420.	1.0	7.8
04-11-72	1335	62.	720.	11.0	8.2
05-05-72	1250	308.	650.	16.0	7.9
06-02-72	1150	127.	790.	20.5	6.9
07-13-72	1158	197.	380.	22.5	7.4
08-06-72	1305	208.	750.	22.0	6.5
09-08-72	1245	90.	650.	23.0	8.2

LITTLE SIOUX RIVER BASIN

06605600 - LITTLE SIOUX RIVER AT GILLETTE GROVE, IOWA (LAT 43°01'06" LONG 095°02'34")

11-05-71	1305	120.	850.	4.5	***
12-13-71	1350	130.	950.	0.5	***
01-27-72	0950	30.	850.	0.5	***
03-15-72	1145	1170.	400.	3.0	***
04-17-72	1325	162.	700.	19.0	***
05-24-72	1345	799.	800.	19.0	***
05-30-72	1500	714.	780.	16.0	***
07-10-72	1350	142.	530.	27.0	***

ANALYSES OF PERIODIC STATIONS

LITTLE SIOUX RIVER BASIN--CONTINUED

06606600 - LITTLE SIOUX RIVER AT CORRECTIONVILLE, IOWA (LAT 42°28'20" LONG 095°47'49")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-07-71	1115	126.	760.	14.0	***
11-01-71	1330	347.	750.	6.0	***
12-02-71	1100	235.	850.	1.0	7.9
01-07-72	1205	127.	1400.	0.0	8.0
02-01-72	1130	67.	1300.	0.0	7.8
03-16-72	1340	1540.	390.	3.0	7.7
04-07-72	1430	412.	800.	6.0	8.5
06-02-72	0735	933.	790.	20.0	8.1
07-07-72	1450	395.	780.	23.0	7.7
09-08-72	1310	250.	620.	18.0	8.7

06607000 - ODEBOLT CREEK NEAR ARTHUR, IOWA (LAT 42°20'10" LONG 095°22'52")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	0935	1.6	1400.	12.0	***
11-04-71	1235	2.4	990.	8.0	***
12-16-71	1435	1.7	690.	0.5	***
01-25-72	1120	0.92	800.	0.5	***
03-15-72	0920	6.6	900.	8.0	***
04-19-72	0925	2.5	800.	7.0	***
06-01-72	0900	13.	800.	15.0	***
07-12-72	1045	12.	770.	21.0	***
08-24-72	1330	11.	780.	24.0	***

06607200 - MAPLE RIVER AT MAPLETON, IOWA (LAT 42°09'28" LONG 095°48'27")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-07-71	1350	32.	640.	17.0	***
11-01-71	1450	122.	600.	7.0	***
12-02-71	1335	41.	800.	1.0	8.0
01-07-72	1345	18.	950.	0.0	8.0
02-01-72	1310	13.	800.	0.0	7.9
02-29-72	1205	1290.	270.	0.0	7.4
04-01-72	1300	59.	650.	9.5	8.6
05-02-72	1315	460.	650.	11.0	8.5
06-02-72	0955	122.	700.	20.5	8.2
07-06-72	1425	149.	650.	22.5	7.4
09-09-72	1010	134.	650.	16.5	8.1

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
LITTLE SIOUX RIVER BASIN--CONTINUED					
06607500 - LITTLE SIOUX RIVER NR TURIN, IOWA (LAT 41°57'52" LONG 095°58'21")					
10-14-71	1150	154.	700.	15.0	7.4
11-11-71	1315	263.	825.	4.0	7.5
01-06-72	1255	119.	1050.	0.0	7.9
02-09-72	1540	64.	1100.	0.0	7.5
03-14-72	1250	3010.	320.	3.0	7.3
04-11-72	1150	409.	720.	11.0	8.4
05-09-72	1330	3280.	750.	12.0	8.0
06-06-72	1330	1330.	670.	25.0	7.9
08-10-72	1415	1570.	750.	23.0	7.7
09-09-72	1145	403.	600.	18.5	8.3
SOLDIER RIVER BASIN					
06608500 - SOLDIER RIVER AT PISGAH, IOWA (LAT 41°49'52" LONG 095°55'50")					
10-14-71	1020	11.	690.	10.0	7.2
11-11-71	1105	22.	750.	4.0	7.6
01-06-72	1035	6.8	810.	0.0	7.0
02-03-72	1250	5.2	830.	0.0	7.3
03-09-72	1310	97.	300.	2.0	7.6
04-11-72	1030	31.	690.	10.0	8.5
05-09-72	1130	93.	800.	13.5	8.2
06-06-72	1035	63.	630.	26.0	8.0
07-06-72	1135	41.	620.	19.5	7.7
08-10-72	1115	58.	620.	18.0	7.6
09-06-72	1435	37.	640.	20.7	7.9
BOYER RIVER BASIN					
06609500 - BOYER RIVER AT LOGAN, IOWA (LAT 41°38'31" LONG 095°47'04")					
10-05-71	1110	21.	1400.	16.0	7.6
11-03-71	1150	114.	800.	5.0	7.1
01-03-72	1030	28.	1500.	0.0	8.9
01-31-72	1120	19.	1800.	0.0	8.9
02-28-72	1030	354.	470.	2.0	7.6
03-09-72	1220	472.	300.	1.0	7.8
04-04-72	1330	94.	800.	10.0	8.1
05-01-72	1310	301.	590.	13.5	8.1
06-30-72	1215	261.	700.	19.5	9.1
07-07-72	0720	213.	640.	17.0	9.3
08-31-72	0950	222.	300.	23.0	9.1
09-05-72	1035	100.	900.	18.5	8.3
09-11-72	1430	17800.	240.	20.0	6.8

INDIAN CREEK BASIN

06610500 - INDIAN CREEK AT COUNCIL BLUFFS, IOWA (LAT 41°17'32" LONG 095°49'59")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-06-71	1200	0.08	800.	12.5	***
10-19-71	1510	0.26	850.	14.0	***
11-04-71	1335	0.71	730.	6.0	7.4
11-23-71	1435	0.73	660.	3.0	7.7
12-14-71	1140	0.86	800.	0.0	9.2
01-12-72	1000	0.52	790.	0.0	8.0
01-31-72	1400	0.14	920.	0.0	7.8
02-17-72	1200	1.8	740.	0.5	8.3
03-03-72	1115	0.56	820.	0.0	7.9
03-15-72	1105	1.3	700.	5.0	8.1
04-06-72	1325	0.59	580.	14.0	8.1
05-04-72	1400	1.7	720.	18.5	8.2
05-18-72	1315	1.5	700.	22.0	8.3
06-02-72	1135	1.5	610.	19.0	6.8
06-28-72	1115	0.50	610.	18.0	7.9
07-11-72	1110	4.8	500.	21.5	8.1
07-25-72	1055	9.4	470.	28.0	8.1
08-09-72	0930	0.41	670.	15.0	7.8
08-24-72	1030	0.69	620.	17.0	8.1
09-28-72	1540	0.63	625.	14.0	9.0

MOSQUITO CREEK BASIN

06610520 - MOSQUITO CREEK NR EARLING, IOWA (LAT 41°45'10" LONG 095°27'50")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1155	0.17	580.	14.5	***
11-03-71	1020	1.0	510.	3.0	7.2
12-01-71	1005	0.66	750.	2.0	***
01-04-72	1520	0.26	860.	0.0	8.5
01-31-72	1020	0.24	760.	0.0	9.2
03-10-72	1205	1.3	380.	3.0	7.6
04-06-72	1100	1.2	600.	5.5	8.6
05-30-72	1010	5.5	650.	14.5	8.4
07-07-72	0935	2.7	580.	19.0	8.3
08-08-72	1115	6.7	480.	21.0	7.9
09-05-72	1300	1.3	500.	19.0	7.9
09-12-72	1240	430.	220.	23.5	6.9

NISHNABOTNA RIVER BASIN

06807410 - WEST NISHNABOTNA RIVER AT HANCOCK, IOWA (LAT 41°23'24" LONG 095°22'17")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-19-71	1010	23.	610.	14.5	***
11-22-71	1550	35.	650.	2.5	7.5
12-20-71	1110	25.	800.	0.0	8.3
01-19-72	1425	13.	750.	0.0	8.2
02-23-72	1105	128.	340.	0.5	8.6
03-10-72	1015	117.	450.	2.0	7.5
03-29-72	1435	59.	650.	3.5	8.3
05-24-72	1325	208.	530.	19.0	8.0
06-26-72	1230	125.	600.	23.5	8.4
07-25-72	1530	139.	600.	25.0	8.0
08-22-72	1505	67.	600.	21.0	8.2
09-20-72	1130	802.	650.	21.5	7.7

06808500 - WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA (LAT 40°52'23 LONG 095°34'48")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1210	68.	730.	13.0	7.5
11-23-71	1320	115.	820.	3.0	7.4
12-20-71	1225	109.	850.	0.0	8.1
01-20-72	1325	82.	900.	0.0	7.2
02-29-72	1305	281.	400.	4.5	7.3
04-20-72	1410	120.	625.	11.0	8.2
06-20-72	1255	942.	500.	20.0	7.5
08-25-72	1005	132.	610.	20.5	8.1
09-01-72	1440	144.	660.	20.0	8.0
09-12-72	1510	16000.	140.	22.0	6.7
09-14-72	1350	18200.	180.	21.0	7.0

06809000 - DAVIDS CREEK NR HAMLIN, IOWA (LAT 41°40'25" LONG 094°48'20")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1025	0.18	400.	13.0	7.9
11-02-71	1225	6.2	500.	7.0	7.4
12-01-71	1220	2.7	560.	0.0	8.1
01-11-72	1215	4.0	450.	0.5	8.1
01-31-72	1030	0.00	650.	0.5	7.1
02-25-72	1245	29.	220.	1.0	9.6
03-10-72	1140	1.8	490.	0.5	7.7
03-31-72	1300	4.8	440.	4.0	8.6
05-03-72	0945	17.	520.	9.0	7.9
05-30-72	1300	11.	550.	15.0	8.2
07-12-72	1415	4.6	480.	24.0	7.1
08-02-72	1155	33.	420.	19.0	7.9
09-06-72	0820	1.7	490.	17.0	8.3

NISHNABOTNA RIVER BASIN--CONTINUED

06809210 - EAST NISHNABOTNA RIVER NR ATLANTIC, IOWA (LAT 41°22'32" LONG 095°04'00")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1200	12.	520.	15.0	***
11-02-71	1010	219.	340.	15.0	***
12-01-71	1620	38.	540.	0.5	8.5
01-11-72	1100	54.	330.	0.0	7.8
01-31-72	1200	14.	740.	0.5	7.4
02-28-72	1135	914.	260.	2.0	8.3
03-10-72	1330	61.	430.	6.0	7.6
03-31-72	1450	46.	450.	6.0	8.6
05-03-72	1205	277.	480.	14.0	7.9
05-30-72	1025	237.	520.	16.0	8.2
07-12-72	1210	160.	440.	25.0	7.5
08-02-72	1515	2650.	180.	22.0	7.4
09-06-72	1030	61.	480.	19.0	8.6

06810000 - NISHNABOTNA RIVER ABOVE HAMBURG, IOWA (LAT 40°37'57" LONG 095°37'32")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1020	138.	590.	14.5	7.7
11-23-71	1100	238.	750.	3.0	7.4
12-20-71	1040	229.	700.	0.0	8.1
01-20-72	1025	174.	860.	0.0	7.4
02-28-72	1150	719.	570.	2.0	7.4
03-23-72	1210	300.	560.	9.0	7.9
04-20-72	1105	270.	625.	11.0	8.7
05-08-72	1510	2970.	480.	9.5	9.0
05-23-72	1240	891.	460.	22.0	7.9
06-20-72	1040	1070.	340.	21.0	7.5
08-24-72	1130	342.	600.	21.5	9.1

TARKIO RIVER BASIN

06811840 - TARKIO RIVER AT STANTON, IOWA (LAT 40°58'52" LONG 095°06'32")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-20-71	1015	0.15	840.	14.0	***
11-22-71	1140	7.4	480.	1.0	7.7
12-21-71	1030	6.7	540.	0.0	8.4
01-20-72	1325	2.8	480.	0.5	7.8
02-23-72	1430	2.3	650.	1.0	8.8
03-28-72	1035	2.9	440.	5.0	8.8
04-25-72	1130	10.	430.	9.5	8.8
05-25-72	1345	47.	480.	16.0	8.0
06-28-72	0920	17.	460.	17.0	8.3
07-25-72	1005	12.	450.	25.0	8.0
08-23-72	1315	7.0	450.	20.0	8.0
09-20-72	1015	39.	440.	21.0	7.9

NODAWAY RIVER BASIN

06817000 - NODAWAY RIVER AT CLARINDA, IOWA (LAT 40°44'19" LONG 095°00'47")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-21-71	1300	28.	400.	15.5	***
11-10-71	1245	32.	420.	7.0	7.7
11-23-71	1450	51.	450.	2.5	7.2
12-21-71	1250	57.	520.	9.2	8.2
01-28-72	1300	14.	700.	0.0	5.0
02-23-72	1230	193.	250.	0.5	8.4
03-21-72	1345	58.	520.	11.5	8.1
04-25-72	1635	90.	480.	16.5	8.8
05-16-72	1330	553.	360.	24.0	8.0
06-27-72	1135	150.	420.	23.5	7.7
08-22-72	1415	74.	330.	25.0	9.1
09-20-72	1330	1460.	375.	26.0	7.7

PLATTE RIVER BASIN

06819190 - EAST FORK 102 RIVER NR BEDFORD, IOWA (LAT 40°38'01" LONG 094°44'41")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-21-71	1050	0.98	520.	15.0	***
11-23-71	1320	2.1	540.	6.0	7.5
12-21-71	1120	3.2	450.	0.5	7.9
01-28-72	1100	0.11	1000.	0.0	7.4
02-23-72	1115	3.9	420.	0.5	8.6
03-21-72	1130	4.6	450.	9.5	7.9
04-25-72	1200	5.6	600.	18.0	7.6
05-08-72	1155	364.	400.	9.0	8.0
05-16-72	1135	30.	380.	20.0	7.8
05-25-72	1040	77.	380.	19.0	7.6
06-27-72	1015	0.94	460.	25.0	8.4
08-22-72	1203	0.38	600.	24.0	8.5
09-20-72	1630	5.6	375.	26.5	8.5

CHARITON RIVER BASIN

06903700 - S FORK CHARITON R NEAR PROMISE CITY, IOWA (LAT 40°48'02" LONG 093°11'32")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	1000	0.20	470.	15.5	***
11-09-71	1100	2.0	325.		8.0
12-14-71	0945	9.2	600.	1.0	8.1
02-07-72	1630	0.86	480.	0.0	7.9
03-1[illegible]-72	1100	66.	500.	5.0	7.6
04-18-72	1115	31.	390.	10.0	7.3
05-31-72	1200	53.	350.		8.0

06903900 - CHARITON R NR RATHBUN, IOWA (LAT 40°49'22" LONG 092°53'22")

DATE	TIME	DISCHARGE (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	TEMPERATURE (DEG C)	PH (UNITS)
10-05-71	0800	12.	300.	16.0	8.1
01-07-72	1200	1190.	*****	1.0	***
02-03-72	1200	14.	350.	0.5	8.0
03-16-72	0900	66.	290.	5.5	7.8
04-18-72	0800	14.	300.	10.0	7.9
07-11-72	1000	8.0	410.	24.5	8.3

DATE	DIS- CHARGE (CFS)	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)
MINNESCTA RIVER BASIN				
05317650 - BLUE EARTH R NR LAKOTA,IOWA (LAT 43 30 LONG 094 09)				
OCT., 1971				
13...	.44	770	8.4	8.0
05317700 - UNION SLOUGH OUTLET NR LAKOTA, IOWA (LAT 43 24 LONG 094 07)				
OCT., 1971				
13...	.49	800	8.6	8.0
05317810 - WF BLUE EARTH R BL MINN-IOWA STATE LINE (LAT 43 26 LONG 094 04)				
OCT., 1971				
13...	2.4	1100	8.4	8.0
DES MOINES RIVER BASIN				
05476550 - JACK CR NR RINGSTED, IOWA (LAT 43 16 LONG 094 38)				
OCT., 1971				
14...	<.01	740	8.5	7.0
05476600 - SILVER CR NR EMMETTSBURG, IOWA (LAT 43 06 LONG 094 43)				
OCT., 1971				
14...	1.0	700	8.3	7.0
05476650 - CYLINDER CR NR RODMAN, IOWA (LAT 43 02 LONG 094 34)				
OCT., 1971				
14...	1.9	1000	8.2	7.0
05476700 - PRAIRIE CR NR WEST BEND, IOWA (LAT 42 55 LONG 094 27)				
OCT., 1971				
14...	.09	1510	8.7	7.0
05476720 - BEAVER CR NR ROLFE, IOWA (LAT 42 50 LONG 094 28)				
OCT., 1971				
15...	.33	700	8.0	9.5
05476740 - PILOT CR NR ROLFE, IOWA (LAT 42 49 LONG 094 27)				
OCT., 1971				
15...	1.6	805	8.3	13.0
05477800 - MUD CR AT BANCROFT, IOWA (LAT 43 18 00 LONG 094 12)				
OCT., 1971				
13...	.15	1400	8.0	8.5
05478100 - N BUFFALO CR NR BUFFALO CENTER, IOWA (LAT 43 19 LONG 093 58)				
OCT., 1971				
13...	.26	650	8.4	9.0
05478150 - BLACK CAT CR NR LONE ROCK, IOWA (LAT 43 12 LONG 094 20)				
OCT., 1971				
13...	<.01	1300	8.5	12.0

ANALYSES OF MISCELLANEOUS STATIONS

DATE	DIS-CHARGE (CFS)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	TEMP-ERATURE (DEG C)
DES MOINES RIVER BASIN--CONTINUED				
05478350 - LOTTS CR NR WEST BEND, IOWA (LAT 43 58 LONG 094 23)				
OCT., 1971				
14...	1.2	1400	8.7	9.0
05478400 - LOTTS CR AT LIVERMORE, IOWA (LAT 42 52 LONG 094 11)				
OCT., 1971				
14...	1.9	1100	8.7	10.0
05479600 - LIZARD CR NR PALMER, IOWA (LAT 42 39 LONG 094 30)				
OCT., 1971				
15...	.46	1900	8.2	13.0
05479800 - NB LIZARD CR NR HAVELOCK, IOWA (LAT 42 48 LONG 094 40)				
OCT., 1971				
15...	.38	840	8.2	9.5
05479900 - LIZARD CR NR GILMORE CITY, IOWA (LAT 42 38 LONG 094 28)				
OCT., 1971				
15...	2.0	1300	8.4	15.0
05480100 - SB LIZARD CR NR PALMER, IOWA (LAT 42 35 LONG 094 32)				
OCT., 1971				
15...	<.01	1000	8.2	13.5
05480300 - SB LIZARD CR NR FORT DODGE, IOWA (LAT 42 29 50 LONG 094 13 59)				
OCT., 1971				
14...	.17	700	8.2	13.0
05480620 - BRUSHY CR NR HOMER, IOWA (LAT 42 23 LONG 093 59)				
OCT., 1971				
14...	.64	810	8.3	15.0
05480660 - BOONE R NR KANAWHA, IOWA (LAT 42 55 LONG 093 53)				
OCT., 1971				
13...	.38	780	8.4	10.5
05480700 - BOONE R NR RENWICK, IOWA (LAT 42 53 LONG 093 55)				
OCT., 1971				
13...	1.2	800	8.4	10.5
05480720 - PRAIRIE CR NR LUVERNE, IOWA (LAT 42 57 LONG 094 05)				
OCT., 1971				
15...	1.2	850	8.3	15.0
05480760 - PRAIRIE CR NR RENWICK, IOWA (LAT 42 52 LONG 093 59)				
OCT., 1971				
13...	.62	730	8.2	10.5

DATE	DIS- CHARGE (CFS)	SPECI- FIC COND- UCTANCE (MICRO- MHOS)	PH (UNITS)	TEMP- ERATURE (DEG C)
DES MOINES RIVER BASIN--CONTINUED				
05480800 - OTTER CR NR GOLDFIELD, IOWA (LAT 42 47 LONG 093 53)				
OCT., 1971 13...	.50	740	8.5	11.0
05480820 - BOONE R NR GOLDFIELD, IOWA (LAT 42 43 LONG 093 57)				
OCT., 1971 13...	4.0	750	8.3	11.5
05480860 - EAGLE CR NR EAGLE GROVE, IOWA (LAT 42 42 LONG 093 49)				
OCT., 1971 13...	.97	750	8.3	11.5
05480900 - EAGLE CR NR WOOLSTOCK, IOWA (LAT 42 34 LONG 093 51)				
OCT., 1971 14...	2.0	810	8.5	10.0
05480940 - WHITE FOX CR NR WOOLSTOCK, IOWA (LAT 42 36 LONG 093 45)				
OCT., 1971 14...	2.0	770	7.9	10.0
05480980 - WHITE FOX CR AT WEBSTER CITY, IOWA (LAT 42 30 LONG 093 48)				
OCT., 1971 14...	2.7	650	8.4	11.0

05480500 - DES MOINES R AT FORT DODGE, IOWA (LAT 42 30 22 LONG 094 12 04)

DATE	TEMP- ERATURE (DEG C) 00010	DIS- CHARGE (CFS) 00060	ALDRIN (UG/L) 39330	DDD (UG/L) 39360	DDE (UG/L) 39365	DDT (UG/L) 39370	DI- ELDRIN (UG/L) 39380	ENDRIN (UG/L) 39390
AUG. 24...	21.0	497	0.00	0.00	0.00	0.00	0.01	0.00

DATE	HEPTA- CHLOR (UG/L) 39410	HEPTA- CHLOR EPOXIDE (UG/L) 39420	LINDANE (UG/L) 39340	CHLOR- DANE (UG/L) 39350	2,4-D (UG/L) 39730	SILVEX (UG/L) 39760	2,4,5-T (UG/L) 39740
AUG. 24...	0.00	0.00	0.00	0.00	0.04	0.00	0.00

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS STATIONS

Periodic determinations of suspended-sediment discharge

The Geological Survey collects suspended-sediment samples at several streamgaging stations other than daily water-quality stations. These samples are collected monthly immediately following the discharge measurement at verticals in the stream cross section. Although these data may represent conditions only at the time of collection, a seasonal relationship between quality and streamflow can be established for long-term characteristics of the stream.

SUSPENDED-SEDIMENT ANALYSES, WATER YEAR OCTOBER 1971 TO SEPTEMBER 1972

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
TURKEY RIVER BASIN				
05411600 - TURKEY RIVER AT SPILLVILLE, IOWA (LAT 43 12 28 LONG 091 56 56)				
OCT., 1971				
12...	--	26	8	.56
NOV.				
15...	9.0	31	18	1.5
FEB., 1972				
07...	.0	17	41	1.9
MAR.				
20...	1.5	177	55	26
MAY				
01...	14.0	192	46	24
JUNE				
13...	27.0	44	62	7.4
JULY				
13...	23.0	1660	6020	27000
24...	29.0	123	22	7.3
SEP.				
05...	22.0	65	17	3.0
MAQUOKETA RIVER BASIN				
05417700 - BEAR CREEK NEAR MONMOUTH, IOWA (LAT 42 02 18 LONG 090 52 59)				
NOV., 1971				
18...	10.5	19	77	4.0
FEB., 1972				
10...	.0	11	42	1.2
MAR.				
23...	3.0	28	1140	86
MAY				
04...	15.0	101	249	68
JUNE				
13...	24.0	30	124	10
JULY				
27...	26.5	122	771	254
WAPSIPINICON RIVER BASIN				
05421000 - WAPSIPINICON RIVER AT INDEPENDENCE, IOWA (LAT 42 27 49 LONG 091 53 42)				
OCT., 1971				
12...	--	48	20	2.6
NOV.				
15...	10.0	109	25	7.4
DEC.				
20...	1.5	222	382	229
FEB., 1972				
07...	.0	53	4	.57
MAR.				
20...	.0	2790	44	331
MAY				
01...	14.0	805	49	107
JUNE				
13...	21.5	212	31	18
JULY				
24...	29.5	738	82	163
SEP.				
05...	21.5	198	64	34
IOWA RIVER BASIN				
05449500 - IOWA RIVER NEAR ROWAN, IOWA (LAT 42 45 36 LONG 093 37 23)				
OCT., 1971				
05...	--	36	192	19

DATE	TEMP- ERATURE (DEG C)	DIS- CHARGE (CFS)	SUS- PENDED SEDI- MENT (MG/L)	SUS- PENDED SEDI- MENT DIS- CHARGE (T/DAY)
IOWA RIVER BASIN--CONTINUED				
05454000 - RAPID CREEK NEAR IOWA CITY, IOWA (LAT 41 41 19 LONG 091 29 15)				
OCT., 1971				
27...	16.0	.21	47	.03
NOV.				
23...	1.0	2.6	33	.23
DEC.				
15...	--	490	1720	2280
28...	.0	12	53	1.7
FEB., 1972				
23...	.0	5.3	6	.09
MAR.				
28...	4.0	11	20	.59
MAY				
30...	16.5	20	56	3.0
JUNE				
20...	17.0	39	530	56
AUG.				
23...	19.5	12	64	2.1
SEP.				
26...	17.0	4.4	94	1.1
05454300 - CLEAR CREEK NEAR CORALVILLE, IOWA (LAT 41 40 36 LONG 091 35 55)				
OCT., 1971				
26...	15.5	2.8	22	.17
NOV.				
23...	3.0	4.7	577	7.3
DEC.				
29...	.0	33	60	5.3
FEB., 1972				
23...	.0	14	14	.53
MAR.				
28...	5.0	40	78	8.4
MAY				
26...	21.5	79	260	55
JUNE				
20...	19.0	429	7730	8950
AUG.				
25...	22.0	68	608	112
SEP.				
26...	17.0	19	38	1.9
05455010 - SB RALSTON CREEK AT IOWA CITY, IOWA (LAT 41 39 05 LONG 091 30 27)				
OCT., 1971				
27...	15.5	.50	88	.12
NOV.				
01...	--	13	1010	35
23...	1.0	.33	150	.13
DEC.				
15...	--	128	3160	1090
30...	.0	4.1	262	2.9
JAN., 1972				
11...	--	1.1	265	.79
MAR.				
15...	2.0	45	8070	981
28...	6.0	1.5	23	.09
APR.				
24...	--	4.4	611	7.3
MAY				
23...	30.0	1.0	25	.07
JUNE				
20...	17.0	4.3	77	.89
AUG.				
22...	24.5	87	249	58
05455500 - ENGLISH RIVER AT KALONA, IOWA (LAT 41 27 59 LONG 091 42 56)				
OCT., 1971				
26...	15.0	16	62	2.7
FEB., 1972				
22...	.0	126	18	6.1
MAR.				
29...	6.0	277	162	121
APR.				
27...	17.5	691	382	713
MAY				
26...	21.5	382	351	362
JUNE				
21...	18.0	872	4600	10800
AUG.				
24...	22.0	176	55	26
SEP.				
27...	17.0	139	70	26

ANALYSES OF MISCELLANEOUS STATIONS

IOWA RIVER BASIN--CONTINUED

05464640 - PRAIRIE CREEK AT FAIRFAX, IOWA (LAT 41 55 22 LONG 091 47 02)

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
DEC., 1971				
28...	.0	28	57	4.3
JAN., 1972				
26...	.0	18	27	1.3
FEB.				
24...	.0	16	9	.39
MAR.				
27...	--	71	72	14
APR.				
27...	18.0	174	255	120
MAY				
30...	16.0	115	271	84
JUNE				
21...	18.0	124	182	61
JULY				
27...	19.0	429	823	953
AUG.				
24...	22.0	71	96	18
SEP.				
27...	12.5	44	82	9.7

SKUNK RIVER BASIN

05472500 - NORTH SKUNK RIVER NEAR SIGOURNEY, IOWA (LAT 41 18 03 LONG 092 12 16)

OCT., 1971				
27...	12.0	18	100	4.9
DEC.				
06...	3.0	48	16	2.1
JAN., 1972				
17...	.0	25	13	.88
MAR.				
01...	.0	1690	201	917
APR.				
10...	3.5	135	57	21
MAY				
23...	21.0	333	131	118
JUNE				
28...	23.0	354	700	669
AUG.				
17...	28.0	399	472	508
SEP.				
18...	19.5	634	206	353

DES MOINES RIVER BASIN

05484800 - WALNUT CREEK AT DES MOINES, IOWA (LAT 41 35 14 LONG 093 42 11)

DEC., 1971				
15...	1.0	7.1	136	2.6
FEB., 1972				
01...	.0	1.7	115	.53
MAR.				
14...	2.0	8.9	46	1.1
MAY				
31...	21.0	20	156	8.4
JULY				
11...	--	8.9	24	.58
AUG.				
30...	21.0	8.4	133	3.0

05485640 - FOURMILE CREEK AT DES MOINES, IOWA (LAT 41 36 50 LONG 093 32 43)

DEC., 1971				
15...	.5	5.9	158	2.5
FEB., 1972				
01...	.0	1.0	22	.06
MAR.				
14...	2.0	13	39	1.4
MAY				
31...	22.0	17	41	1.9
AUG.				
29...	29.0	9.5	5	.13

DATE	TEMPERATURE (DEG C)	DISCHARGE (CFS)	SUSPENDED SEDIMENT (MG/L)	SUSPENDED SEDIMENT DISCHARGE (T/DAY)
BOYER RIVER BASIN				
06609500 - BOYER RIVER AT LOGAN, IOWA (LAT 41 38 31 LONG 095 47 04)				
OCT., 1971				
05...	16.0	21	18	1.0
NOV.				
03...	5.0	114	350	108
DEC.				
01...	.5	44	42	5.0
JAN., 1972				
03...	.0	28	13	.98
FEB.				
28...	1.0	354	197	188
APR.				
04...	10.0	84	55	12
MAY				
04...	13.5	301	986	801
30...	19.5	261	1100	775
JULY				
07...	17.0	213	2100	1210
AUG.				
01...	23.0	222	352	211
SEP.				
05...	18.5	100	77	21
06609600 - WILLOW CREEK NEAR LOGAN, IOWA (LAT 41 37 54 LONG 095 53 27)				
OCT., 1971				
04...	19.0	3.6	12	.12
19...	15.0	11	40	1.2
24...	15.5	18	32	1.6
29...	8.0	1.0	218	.59
NOV.				
02...	9.5	1.4	72	.27
07...	14.0	2.8	39	.29
12...	8.0	4.6	33	.41
13...	11.0	4.7	693	8.8
16...	5.0	7.4	288	5.8
20...	4.5	5.3	610	8.7
29...	4.0	4.4	380	4.5
DEC.				
02...	5.0	4.0	281	3.0
06...	3.5	3.6	25	.24
10...	4.0	3.0	57	.46
15...	4.0	2.4	71	.46
JAN., 1972				
02...	3.0	2.0	40	.22
MAR.				
15...	14.5	10	143	3.9
20...	10.0	7.7	152	3.2
APR.				
14...	8.5	10	107	2.9
MAY				
01...	10.5	130	8970	3150
19...	26.5	16	70	3.0
JUNE				
30...	29.5	7.9	135	2.9
JULY				
01...	--	6.2	55	.92
05...	--	6.8	45	.83
09...	--	7.5	69	1.4
10...	22.0	9.0	53	1.3
14...	26.5	15	170	6.9
14...	22.0	140	23400	8850
15...	26.0	28	845	64
19...	28.0	11	135	4.0
21...	29.5	9.6	150	3.9
24...	29.5	64	4470	772
30...	30.5	12	163	5.3
AUG., 1972				
01...	21.5	19	121	6.2
03...	28.5	10	98	2.6
06...	29.5	12	57	1.8
16...	29.5	11	27	.80
17...	32.0	8.6	106	2.5
23..	24.0	10	127	3.4
26...	22.0	12	81	2.6
30...	21.0	12	61	2.0
SEP.				
03...	20.5	11	62	1.8
06...	20.5	10	61	1.6
07...	20.0	9.6	44	1.1
11...	20.0	2140	6880	39800
12...	20.0	9040	7530	184000

DATE	TEMP-ERATURE (DEG C)	DIS-CHARGE (CFS)	SUS-PENDED SEDI-MENT (MG/L)	SUS-PENDED SEDI-MENT DIS-CHARGE (T/DAY)
NISHNABOTNA RIVER BASIN				
06808500 - WEST NISHNABOTNA RIVER AT RANDOLPH, IOWA (LAT 40 52 23 LONG 095 34 48)				
OCT., 1971				
20...	13.0	68	23	4.2
DEC.				
20...	.0	108	47	14
JAN., 1972				
20...	.0	82	15	3.3
MAR.				
23...	9.0	143	115	44
APR.				
20...	11.0	120	62	20
JUNE				
20...	20.0	942	3290	8370
JULY				
19...	26.5	312	1310	1100
AUG.				
25...	20.5	192	58	30
SEP.				
12...	--	16000	6070	262000
14...	21.0	18200	3470	171000
06809000 - DAVIDS CREEK NEAR HAMLIN, IOWA (LAT 41 40 25 LONG 094 48 20)				
OCT., 1971				
05...	13.0	.18	39	.02
JAN., 1972				
11...	.5	4.0	87	.94
CHARITON RIVER BASIN				
06903700 - SF CHARITON RIVER NEAR PROMISE CITY, IOWA (LAT 40 48 02 LONG 093 11 32)				
OCT., 1971				
05...	15.5	.20	71	.04
NOV.				
09...	--	2.0	84	.45
FEB., 1972				
07...	.0	.86	40	.09
06903900 - CHARITON RIVER NEAR RATHBUN, IOWA (LAT 40 49 22 LONG 092 53 22)				
OCT., 1971				
05...	20.0	12	18	.58

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality stations have been discontinued in Iowa. Continuous daily records of water temperature or sediment were collected and published for the period of record shown for each station. An asterisk (*) in the type of record column indicates that periodic data is available for that parameter subsequent to the period of daily record.

Discontinued water-quality stations

Station name	Station number	Drainage area (sq mi)	Type of Record	Period of record
Paint Creek at Waterville, Iowa	05388500	42.8	Temp. Sed.	1952-56 1952-56
Turkey River at Garber, Iowa	05412500	1,545	Temp. * Sed. *	1957-62 1957-62
Wapsipinicon River at Independence, Iowa	05421000	1,048	Chem. * Temp. * Sed. *	1968-70 1967-70 1967-70
Iowa River near Rowan, Iowa	05449500	429	Temp. * Sed. *	1957-62 1957-62
Cedar River at Cedar Rapids, Iowa	05464500	6,640	Chem. * Temp. * Sed.	1906-07; 1944-54 1944-54 1943-54
Des Moines River at Des Moines, Iowa	05482000	6,245	Chem. Temp. Sed.	1954-55 1954-61 1954-61
E. Fork Hardin Creek near Churdan, Iowa.	05483000	24.0	Temp. * Sed. *	------- 1952-57
Raccoon River at Des Moines, Iowa.	05485000	3,590	Chem. Temp.	1945-47 1945-47
Des Moines River below Raccoon River at Des Moines, Iowa.	05485500	9,770	Chem. * Temp. * Sed.	1944-45 1944-47 1944-47
Middle River near Indianola, Iowa.	05486490	503	Temp. * Sed.	1962-67 1962-67
Little Sioux River at Correctionville, Iowa.	06606600	2,500	Chem. * Temp. * Sed.	1954-55 1951-62 1950-62
Little Sioux River near Kennebec, Iowa.	06606700	2,738	Temp. Sed.	1950-55 1950-57
Steer Creek near Magnolia, Iowa.	06609200	9.26	Temp. Sed.	1963-69 1963-69
Thompson Creek near Woodbine, Iowa.	06609590	6.97	Temp. Sed.	1963-69 1963-69
Mule Creek near Malvern, Iowa.	06808000	10.6	Temp. Sed.	1958-69 1958-69
Davids Creek near Hamlin, Iowa.	06809000	26.0	Temp. * Sed. *	1952-53; 1965-68 1952-68
Nishnabotna River above Hamburg, Iowa.	06810000	2,806	Chem. *	1969-70
Honey Creek near Russell, Iowa.	06903500	13.2	Sed.	1952-62
Chariton River near Rathbun, Iowa.	06903900	551	Temp. * Sed. *	1962-69 1962-69

Type of record: Chem. (chemical quality); Temp. (water temperature); Sed. (sediment).

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